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IOWA CENTENNIAL HISTORY

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Iowa ~~~~~
The Rivers of Her Valleys

By
WILLIAM J. PETERSEN



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THE STATE HISTORICAL SOCIETY OF IOWA

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THIS BOOK

GEOGRAPHY conditions the lives of people just as certainly as heredity, religion, or occupation affect human conduct. In the fabric of history the element of place is as essential as time and people. Answers to the question where are quite as pertinent to cause and effect as statements telling who and when. The lay of the land, the quality of the soil, the extent of erosion, the character of the rivers, and the nature of the valleys constitute the foundation upon which the superstructure of history rests. A knowledge of the geography of Iowa is necessary to comprehend the economic, social, and political development of the State.

The character of this book may be expressed by paraphrasing the words of Enoch W. Eastman on the Iowa stone in the Washington monument. *Iowa: The Rivers of Her Valleys*, like the affections of her people, bind the resources of the Commonwealth into an inseparable unit. It is evident that the rivers with their innumerable branches extend everywhere, leading to the bountiful prairies and connecting all with natural bonds. While the streams have materially influenced the course of Iowa history, they are also indicative of deeper currents in the fortunes of the explorers, pioneers, and others who have lived between the two great rivers on the borders of the State.

JOHN ELY BRIGGS

OFFICE OF THE EDITOR
THE STATE HISTORICAL SOCIETY OF IOWA
IOWA CITY IOWA

THE AUTHOR'S PREFACE

IOWA owes much to the streams that drain her fertile valleys. These waterways played a dramatic rôle as highways of exploration and communication as well as avenues of commerce. Along the banks of the rivers of Iowa the pioneers raised their log cabins. They found the streams abounding in fish of all kinds. Wild game lurked in the forests that hemmed the river banks. Towns and cities sprang up at ferry crossings and bridges were constructed at these strategic points. Rivers have afforded many communities their chief source of water supply. As settlements grew the streams also served as arteries for sewage disposal. They have also offered adequate drainage for the plentiful rainfall of Iowa; disastrous floods are rare and in comparison with those on the lower Mississippi or the Ohio have not caused serious loss of life or property damage. Indeed, the story of the streams of Iowa touches so many phases of life that the history of the river valleys is the history of the State itself.

During the summer of 1939 Dr. Benj. F. Shambaugh suggested that a volume on the rivers of Iowa be prepared for the Iowa Centennial History. This book is the fulfillment of that suggestion.

Although the history of all Iowa streams follows much the same pattern, some attempt has been made to vary the emphasis. Brief excursions into the geology and archaeology of individual river basins; glimpses into the history of the

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discovery and exploration of a stream; flashlight views delineating the settlement and growth of a valley; and something about the dramatic achievements of the inhabitants are generally presented. The origin and meaning of the names of Iowa streams has received attention, especially through a fairly intensive study of the earliest maps and gazetteers relating to the Iowa country.

The author is indebted to J. W. Dixon of the United States Army Engineers at Rock Island; R. G. Kasel, Lawrence C. Crawford, and Wayne I. Travis of the Water Resources Branch of the United States Geological Survey; and Professor J. W. Howe of the College of Engineering of the State University of Iowa for advice and assistance in the preparation of this volume. Fellow staff members of the State Historical Society of Iowa were especially helpful. Miss Ethyl E. Martin, Superintendent of the Society, read the manuscript carefully. Dr. John Ely Briggs contributed freely of his editorial talents, and Dr. Ruth A. Gallaher also made many valuable suggestions. Proof was read by Miss Adelaide Gill and Miss Marie Haefner. To Dr. Jacob A. Swisher the author is indebted for the index. Miss Shirley Briggs drew the fourteen maps illustrative of the valleys.

WILLIAM J. PETERSEN

THE STATE HISTORICAL SOCIETY OF IOWA
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CRADLES OF CIVILIZATION

SINCE the dawn of history river valleys have been the cradles of civilization. Along the banks of the Nile the ancient Egyptians reared their lofty pyramids. In the valley of the Euphrates (which the Bible mentions as one of the four rivers of Eden) the Hanging Gardens of Babylon graced the palace grounds of Nebuchadnezzar. In the waters of the sacred Ganges the fervent Brahmans bathed their slim bronze bodies in their "Mother Gangá". Along the banks of the Jordan (where John the Baptist began his mission and Jesus took refuge from Jerusalem) the Twelve Tribes of Israel dwelt in the days of the Prophets. From the banks of the classic Tiber the Roman Caesars rumbled forth in chariots to conquer half the then known world.¹

Rivers have served in all ages as arteries for the transportation of the agricultural and industrial products of mankind. By raft and crude barge the goods of the hinterland were brought to the ports of the Mediterranean World. These ports developed into centers of commerce and culture. The rise and fall of nations may be traced to the prosperity or destruction of such entrepôts strung along the rim of the Mediterranean from Sidon and Tyre in the east to Carthage and Rome in the west. During the Middle Ages the formation of the Hanseatic League served to enrich the seaports and trading cities of the Baltic Sea.

The busiest ports of the world today are located on or

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near the mouths of great inland waterways. In England there is London on the Thames and Liverpool on the Mersey. In Europe there is Rotterdam on the Maas, Antwerp on the Scheldt, Hamburg on the Elbe, and Havre on the Seine. In Asia there are Canton and Hong Kong on the Chukiang, and Shanghai and Nanking on the Yangtze. The same story can be told of flourishing ports on the Yellow, on the Indus, on the Irrawaddy, on the Ganges, on the Mekong, and on scores of other streams. Along these liquid troughs has flowed the commerce of the nations from antiquity to the twentieth century. The products of the Thames and the Mersey, the Rhine and the Seine, have been floated to the four corners of the globe.

With the discovery and colonization of the western hemisphere, rivers once again proved to be a factor in determining the growth of mighty emporiums. In South America the Amazon, La Plata, and Orinoco are flanked with bustling ports of call for the ships of the seven seas. The same is true in North America. Quebec and Montreal on the majestic St. Lawrence and Vancouver at the mouth of the Fraser are flourishing Canadian ports. New York, the greatest port in the world, is located at the mouth of the Hudson River. Philadelphia is situated on the Delaware, Baltimore is near the head of Chesapeake Bay. New Orleans, which receives its tribute from the far-flung reaches of the Mississippi Valley, handles millions of tons of freight annually.²

The roll of ports on the Mississippi and its tributaries contains the names of some of the most densely populated centers in the United States. Pittsburgh, at the confluence

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of the Allegheny and Monongahela, annually ships millions of tons of coal and steel down the Ohio. Minneapolis and St. Paul, at the head of navigation on the Mississippi, have acquired three-quarters of a million population in less than a century. A half million people are clustered on the banks of the Missouri at Kansas City. St. Louis County, where the Mississippi, Missouri, and Illinois rivers meet, can count over a million inhabitants. In addition to these great ports one might mention Cincinnati and Louisville on the Ohio, Memphis and Baton Rouge on the lower Mississippi, St. Joseph and Omaha on the Missouri, and Peoria and Chicago on the Illinois River-Lake Michigan waterway.³

Rivers have played the same dramatic rôle in the story of Iowa. Bounded by the Mississippi River on the east and the muddy Missouri on the west, the Hawkeye State is embraced by two of the greatest rivers in the world. The Federal census in 1940 disclosed sixteen cities in Iowa with populations exceeding 15,000. Fifteen of them are located on the principal waterways of Iowa: six nestle beside the Mississippi — Dubuque, Clinton, Davenport, Muscatine, Burlington, and Keokuk. Fort Madison just misses this group, having only 14,063 inhabitants. Two more — Sioux City and Council Bluffs — are located on the Missouri River. Ottumwa, Des Moines, and Fort Dodge are situated on the Des Moines, Marshalltown and Iowa City on the Iowa River, and Cedar Rapids and Waterloo on the Cedar. Mason City alone of all the Iowa cities having over 15,000 population, is not located on a river, though it is drained by Lime Creek, the principal tributary of the Shellrock River.⁴

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Rivers have served as the boundaries between provinces and nations. Rivers have served as bones of contention between potentates and kings. Rivers have served as highways to empire and as paths of inglorious defeat. A Julius Caesar crossing the Rubicon, a gallant Hasdrubal conquered at the Metaurus, a George Washington crossing the Delaware, a victorious Napoleon dictating the Treaty of Tilsit to Tsar Alexander on a raft on the Niemen — these and many more dramatic occasions present stirring scenes from the pages of ancient and modern history. The significance of the "Battle of the Boyne" is indelibly written in the hearts of Irishmen everywhere. The cry "Remember the River Raisin" kindled the fighting spirit of the frontiersmen in the Old Northwest Territory. The capture of Fort Henry and Fort Donelson, the siege of Vicksburg, the Battle of Lookout Mountain, and the Red River Expedition recall to memory heroic episodes on western waters during Civil War days. In the World War the Battle of the Somme, the Battle of the Aisne, and the Battle of the Marne were but a few of the many bloody engagements when all was not quiet on the western front.⁵

The reverberations of titanic struggles were often felt with dramatic effect in Iowa. The Battle of the Des Moines was fought on April 19, 1735, exactly forty years before the Battle of Lexington and Concord. At the close of the French and Indian War in 1763, the French empire in North America dissolved and the Mississippi thenceforth served as the boundary between English and Spanish territory. The British attack on the Dubuque lead mines in 1780 was a stirring incident of Revolutionary War days.

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The Battle of Campbell's Island and the Battle of Credit Island were harrowing episodes in the annals of the War of 1812. In 1832 the Father of Waters ran red with the blood of Black Hawk's followers at Bad Axe. During the Civil War the Mississippi and the Missouri were strategic military highways.⁶

In legend, in poetry, and in song, rivers have played their memorable rôle. The bewitching Lorelei and the fantastic music of the Rhinemaidens are legends of the Rhine. For dramatic intensity these are readily matched on the Mississippi by the legend of the Indian maiden Winona singing her death song from towering Maiden Rock. The dragon-like Piasa which carried off and devoured Indians would have challenged the heroism of a Siegfried. For sheer romance a Lysander swimming the Hellespont to visit Hero is equalled by the legend of Wapsie and Pinicon.⁷

Rivers have been the theme of many a poet's song. The "Blue Danube", the "Song of the Volga Boatman", and the "Watch on the Rhine" are immortal masterpieces concerning some of the mightier rivers of Europe. But the smaller streams have not been forgotten: "Flow Gently Sweet Afton" and "Where the River Shannon Flows" are but two of the many musical tributes to little rivers.

American song writers have not forgotten their favorite streams. Indeed, scores of river songs have been written between the time when Stephen Collins Foster sang "Way down upon de Swanee ribber" in 1851 and Jerome Kern gave the world his "Old Man River" in 1927. The nostalgic longing for distant lands is revealed in such songs as "My Castle on the River Nile" which appeared in 1901 and

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the "Congo Love Song" which was composed in 1903. Similar songs memorialize American streams: "On the Banks of the Wabash, Far Away" (1897), "Where the Silv'ry Colorado Winds Its Way" (1901), "Down Where the Silvery Mohawk Flows" (1904), "On the Mississippi" (1912), "Missouri Waltz" (1914), and "Beautiful Ohio" (1918). "Steamboat Bill" and "Waiting for the Robert E. Lee" were popular song hits on the eve of the first World War.

Iowans have participated in the composition of such river songs. In 1906 Le Roy Thomas published his "Oneota", an intermezzo-two step for band and orchestra. Dancers in many lands have swayed to the music of an Oskaloosa composer who gave the world the "Missouri Waltz". Antonin Dvorak composed much of his "New World Symphony" on the banks of the Turkey River in Iowa.⁸

Many books have also appeared which deal with rivers, large and small. From his boyhood haunts across the river in Illinois, Edgar Lee Masters penned his *Spoon River Anthology*.⁹ No matter how small the stream, man can always say with Longfellow:

Thou hast taught me, Silent River!
Many a lesson, deep and long;
Thou hast been a generous giver;
I can give thee but a song.

Physiographically speaking, most scientists would probably accept John Playfair's definition of a river: "Every river appears to consist of a main trunk, fed from a variety

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of branches, each running in a valley proportioned to its size, and all of them together forming a system of valleys, communicating with one another, and having such a nice adjustment of their declivities, that none of them join the principal valley either on too high or too low a level; a circumstance which would be infinitely improbable if each of these valleys were not the work of the streams that flow through them.”¹⁰

The upper Mississippi River, measured in terms of geology, is hoary with age, dating back into the early glacial epoch. The lower course of the Missouri was probably determined by the earliest and most extensive ice sheet, but the Iowa streams are more youthful, some of them having begun their process of cutting valleys as late as post-glacial time. Such long streams as the Des Moines River, however, generally reveal a very complex history which involves several glacial epochs.¹¹

Along the rivers of Iowa may be found the vestiges of prehistoric man: the Algonquian, the Oneota, the Hopewell, the Effigy Mound, and the Mill Creek cultures. The Algonquian tribes were woodland Indians whose villages were hidden away in the forests then skirting the rivers and smaller streams of eastern Iowa. They were also a canoe people, doing much of their travel by water. The Hopewell culture is found along the bluffs and terraces of the Mississippi between the Iowa and the Upper Iowa rivers. The Oneota culture takes its name from the Winnebago name for the Upper Iowa River. Although resembling the Mandan, and undoubtedly Siouan, the Mill Creek culture is named for a tributary of the Little Sioux on

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which it is found. The Effigy Mound culture is exemplified along the Mississippi in northeastern Iowa.¹²

Many political and legal problems confronted the pioneers of the Hawkeye State in regard to their rivers. Roads had to be surveyed and constructed, ferries established, and bridges built. The Territorial and State laws were filled with such measures. In addition, the Senate and House journals were replete with bitter arguments on internal improvements.¹³ The following story about Robert G. Roberts illustrates the deep and abiding love which pioneer Iowans manifested for their favorite streams. Roberts settled in what is now Iowa Township in Cedar County in August of 1836. A Pennsylvanian by birth, this sturdy pioneer is said to have been the first white man to stake a claim west of the river in Cedar County. Few cherished the Cedar River more warmly than did Robert G. Roberts, who faithfully represented Cedar, Linn, Jones, and Johnson counties in the House of Representatives of the Territorial legislature. Once, during the session, a bill had been introduced to improve the navigation of the Iowa River and Roberts was anxious to include the Cedar River in the measure. A prankster in the house informed Roberts, who was half asleep at the time, that a vote was being taken on the "river bill". Springing to his feet, Roberts attracted the presiding officer's attention. "Mr. Speaker! Mr. Speaker! is Cedar in that ere bill? Because if Cedar is in that ere bill, I goes for it", he roared. This impetuous outburst by the loyal Representative from the Cedar Valley provoked much hilarity and gained for Roberts the sobriquet "Old Cedar". It was by such log-rolling tactics that State and

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Federal funds were frequently diverted into internal improvements for Iowa streams.¹⁴

Prior to the advent of the railroad, the Mississippi and the Missouri were the great highways of transportation and communication. Steamboating on the upper Mississippi began with the voyage of the *Virginia* from St. Louis to what is now Fort Snelling in 1823. A lead period, an immigration period, and a grain period embraced the years to about 1890. Thereafter a decline set in which was followed in 1910 by the sale of the Diamond Jo Line boats and the virtual disappearance of packet service. The inauguration of the Federal Barge Line on the upper Mississippi in 1927 ushered in a new era. From a few thousand tons of freight in that year the traffic on the upper Mississippi has grown by leaps and bounds. During 1940 the United States Army Engineers reported a total of 2,032,890 tons of freight transported on the upper Mississippi, an increase of 53 per cent over that of 1939. This tonnage was exclusive of "between lock traffic" on the river. The steadily increasing number of common carriers in the upper Mississippi trade had helped swell this tonnage. In 1941, with a proving ground at Savannah, an arsenal at Rock Island, and a munitions plant and testing ground being established near Burlington, the upper Mississippi appeared ready to demonstrate its military as well as its commercial value.¹⁵

Equally colorful although by no means so important in point of tonnage is the story of the Missouri. The first steamboat ascended the Big Muddy to Council Bluffs in 1819; in 1860 the *Chippewa* and the *Key West* churned up the Missouri to Fort Benton. In June of 1940 citizens of

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Sioux City exhibited considerable interest when 400,000 gallons of gasoline arrived by boat, thus reestablishing water transportation after more than two generations of inactivity. Except for the Des Moines River, transportation on Iowa streams has been more novel than impressive.¹⁶

Although the smaller streams did not distinguish themselves as highways of commerce they furnished the power that turned the wheels of industry in pioneer days. The first sawmills and gristmills were established in the Black Hawk Purchase during the 1830's. By 1870 the Federal census enumerated 502 flour and gristmills and 545 sawmills — or more than a thousand mills in the Hawkeye State. Most of these mills were operated by water power.

Ten years later the census takers counted 713 flour and gristmills with 2121 runs of millstones. These were operated by more than a thousand water wheels which were supplemented by 287 steam engines. The capital invested in these mills amounted to almost eight million dollars and the value of the milling products totaled more than nineteen million dollars. There were also 328 sawmills with forty-eight water wheels and 320 engines. In addition to these there were thirty-four woolen mills using twenty-two water wheels. The decade of the seventies was the peak period for this type of power development in Iowa. During the years that followed, the number of mills steadily declined. Moreover, most of the mills now operating are run by steam or electricity; only a few of them are still run by water power. In pioneer times the rivers of Iowa were responsible for the production of millions of dollars worth of goods annually.¹⁷

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Immense sums have been spent on river improvement for the Mississippi and the Missouri, with their tributary Iowa streams. In 1826 it was estimated that a sum "not exceeding \$30,000" was needed to improve the Des Moines Rapids and the Rock Rapids of the upper Mississippi for steamboating. In 1837 Robert E. Lee surveyed both rapids and recommended their improvement. In 1877, after ten years of work, the Des Moines Rapids Canal was completed at a staggering cost. In its day this remarkable engineering feat ranked with the Panama Canal in importance. A similar canal was built below Le Claire. Then, in 1913, the Keokuk Dam flooded the area once occupied by the Des Moines Rapids Canal. After having spent millions of dollars in endeavoring to maintain a six-foot channel between Minneapolis and St. Louis, the United States government increased this project in 1930 to a nine-foot channel with twenty-six dams costing approximately \$160,000,000. Meanwhile, some \$66,000,000 was spent prior to 1930 on the Missouri River between Sioux City and its mouth. Such sums dwarf the expenditures on other Iowa streams. Only the Des Moines was subjected to extensive attempts at improvement.¹⁸

Rivers have proved costly in still other ways. Storm and flood have resulted in heavy losses to urban and rural communities. Millions of dollars have been spent to improve the drainage, hasten run-off, and protect farm and town from flood damage. The cost per acre has been high and the work in many places has reached a point of perfection where engineers are inclined to remark that further expenditures cannot be justified by the good to be gained.¹⁹

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Rivers and creeks have required the erection of thousands of bridges during the past century. Most of the early bridges were washed out again and again. Considering the cost of constructing and repairing bridges and culverts on all the primary, secondary, and county trunk roads, this figure mounts to giant proportions. Thus it should be remembered that there are over 1200 named streams and creeks in Iowa demanding numerous culverts and bridges ranging in cost from a few hundred to more than a million dollars. For example, 7648 bridges and culverts were built in the five years beginning with 1933. A total of \$1,939,746.25 out of Iowa's \$13,887,440.79 primary road fund was expended on bridges and culverts in 1936. These figures do not include the expenditures on bridges and culverts by counties. Nor do they include the numerous trestles and bridges required by the almost ten thousand miles of railroad track in the Hawkeye State. Clearly, although the settlement of Iowa began in 1833, the problem of bridging the streams is still a vital matter.²⁰

And so the enumeration of the many blessings as well as burdens that mankind derives from rivers might be continued. Streams have been of inestimable value to many communities in supplying water. They have served as a convenient outlet for sewage disposal.²¹ They have afforded citizens one of the most popular places for rest and recreation. The pride of Iowans in their rivers and lakes is indicated by the location of the numerous State Parks that have been established.²²

The history of rivers in Iowa touches many phases of human life. As each valley is distinctive in physiography,

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so the events associated with each river differ from the history of the others. Yet all are fundamentally similar. Exploration, settlement, and trade followed the rivers of Iowa as everywhere else. It is significant that the general pattern of civilization has been reproduced in the experiences of the men and women who have inhabited the valleys between the mighty arms of the Mississippi and the Missouri. The age-old experience of the human race has been repeated with variations in time and place, but the story reveals essentially the same instincts and results. Some universal element makes river valleys the cradles of human culture. Perhaps the fact is echoed in the longings of Alexander Pope when he said:

I've often wish'd that I had clear,
For life, six hundred pounds a year;
A handsome house to lodge a friend,
A river at my garden's end.

Not all Iowans have a river at their "garden's end"; they can, however, point to over 1200 rivers, creeks, and runs. The history of these streams forms the subject-matter of the following pages. Because of their geographical, physical, and historical unity the Mississippi and its tributaries will be discussed first. These streams drain over two-thirds of the State. The Missouri and its Iowa tributaries will be treated as a similar unit. Nor will the little rivers be forgotten, for these, after all, are the most familiar to the vast majority of Iowans who can boast a river at their garden's end.

THE FATHER OF WATERS

RICH in history and legend is the majestic Father of Waters. From the sky-blue waters of Itasca in the North Star State to the mud-drenched Balize in the Pelican State, the Mississippi River abounds in romantic song and story. It has served as a boundary line between warlike Indian tribes and mighty nations. It has served as the main highway in the discovery and exploration of an inland empire. It has served as the great artery of immigration to the Mississippi Valley. Upon its broad bosom the pioneers transported their argosies of lead and grain, lumber and merchandise. Along its borders they carved out ten enduring Commonwealths to add strength and luster to the American Union. Within the land drained by the Mississippi and its fifty-odd navigable tributaries lies the most fertile soil and the most valuable mineral resources of the United States.²³

Since prehistoric times mankind has fought to dwell within the Valley of the Mississippi. Long before the coming of the white man the ancient mound builders reared their landmarks along the Father of Waters. Their conical mounds may be seen at the very headwaters of the Mississippi in Itasca State Park. They fashioned their curious effigies of birds and bears on the towering heights that form the northeastern border of Iowa. Across the Mississippi from St. Louis they reared Cahokia Mound, a monument far greater in cubic content than the Pyramid of Cheops.

The Father of Waters

Near the confluence of the Ohio and the Mississippi archaeologists have discovered a buried city of unusual size and unknown antiquity. Along Crowley's Ridge in Arkansas, in the valley of the Ouachita in Louisiana, and at numerous other points along the great waterway the mound builders left mute evidence of their presence.²⁴

During historic times powerful Indian tribes have contested for the right to maintain their villages along the banks of the Mississippi. The numerous tribes speaking the Algonquian tongue were continually at war with the marauding tribes of Siouan stock who hunted buffalo on the western prairies. Thus, around 1650, the Chippewa, the Kickapoo, and the Illinois fought the Assiniboin, the Dakota, the Ioway, the Missouri, and the Osage along a line of battle stretching from the mouth of the Ohio River northward to Lake Superior. South of the Ohio the Chickasaw, Choctaw, Natchez, and Taensa faced the Quapaw and the several tribes of the Tunican stock. More than a hundred Indian tribes were intimately associated with the history of the Great River.²⁵

The presence of the red man is attested by the Indian nomenclature of such river towns as Bemidji, Red Wing, Wabasha, Winona, Minneiska, Wyalusing, Waupeton, Camanche, Muscatine, Keokuk, Oquawka, Cahokia, Kaskaskia, Osceola, Arkansas City, and Natchez. Even the river itself was named by the red man. It was the powerful Ojibway who called it Missi Sebe, or Great River. This name, at first used only in reference to the headwaters of the Mississippi, was passed on by various Algonquian tribes to the French fur traders and missionaries, who in turn

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applied it to the river as it coursed southward. In time the name Mississippi displaced various other Indian names in use along the lower river. It also supplanted the thirty or more names that had been applied to the mighty waterway by Spanish and French explorers. To this day the Mississippi remains for the white man what it was to the dusky Ojibway — the Great River.²⁶

The true magnitude of the Great River may be realized when it is remembered that almost three centuries elapsed from the exploration of the lower Mississippi by De Soto in 1541 to the discovery of its source in Lake Itasca by Henry R. Schoolcraft in 1832. It was on May 8, 1541, that De Soto and his tattered followers viewed the Mississippi from the fourth Chickasaw Bluff at what is now Memphis. "The River was almost halfe a league broad", an eye-witness recorded. "If a man stood still on the other side, it could not be discerned whether he were a man or no. The River was of great depth, and of a strong current; the water was alwaies muddie; there came downe the River continually many trees and timber."²⁷

More than a century passed before Joliet and Marquette discovered the upper Mississippi in 1673.²⁸ In the years that followed a score of notable explorers — soldiers, fur traders, miners, and priests — stalked across the stage. The names of Robert Cavelier (Sieur de La Salle), Michel Aco, Louis Hennepin, Nicolas Perrot, Baron Lahontan and Pierre Charles Le Sueur were notable during the French regime. The flag of George III of England was most ably carried by two Connecticut Yankees — Jonathan Carver and Peter Pond. The Spanish ensign flew over the west

The Father of Waters

bank of the Mississippi from 1762 until that region was transferred to France in 1803. During this period Jean Marie Cardinal worked the lead mines around present-day Dubuque until driven out by the English and their Indian allies in 1780. After the Revolutionary War the Spaniards endeavored to tighten their grip on the upper Mississippi through a system of land grants — to Julien Dubuque in 1796, to Louis Tesson in 1799, and to Basil Giard (the first Iowa absentee landlord) in 1800. With the consummation of the Louisiana Purchase the American flag was raised at New Orleans on December 20, 1803, and at St. Louis on March 10, 1804. The entire Mississippi Valley had become a part of the United States.²⁹

President Jefferson lost no time in securing a firm hold on this new possession. In 1805 Lieutenant Zebulon M. Pike was sent to discover the source of the Mississippi. Pike had a seventy-foot keelboat, with which he could make about twenty miles a day upstream in a favorable wind. After a winter in the wilds of Minnesota, having gone no farther than Leech Lake, Pike returned to St. Louis on April 30, 1806. He had failed in his quest for the true source of the Mississippi.³⁰

The Father of Waters, like ancient Gaul, may be divided into three parts. The true upper Mississippi flows from Lake Itasca to the Falls of St. Anthony at Minneapolis; the middle part of the river extends from the Twin Cities to the mouth of the Missouri; and the lower Mississippi flows from St. Louis southward to the Gulf of Mexico. Generally, however, the mouth of the Missouri is accepted as the dividing point between the lower Mississippi and the

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upper Mississippi, the latter embracing the two stretches above and below the Falls of St. Anthony.

Lake Itasca in north central Minnesota is the source of the Mississippi River. A multitude of lakes and streams contribute to this beautiful fountain head — Elk Lake and Mary Lake being the largest and Lake Hernando de Soto the most remote with an elevation of 1571 feet above sea level. Lake Itasca itself lies at an elevation of 1457 feet and is 2546 miles distant from the Gulf of Mexico by way of the river. The word Itasca was coined from the two Latin words *veritas* and *caput* (true head) by Henry R. Schoolcraft while on his way to discover the source of the Mississippi in 1832. The celebrated Indian agent and explorer simply took the last four letters *itas* of the word *veritas* and combined them with the first two letters *ca* of the word *caput* — which gave the new word Itasca.⁸¹

Slipping quietly through the lush wild rice fields at the foot of Lake Itasca, the Mississippi is obstructed during the first few miles of its course by diminutive dams thrown across its waters by the industrious beaver. Gathering speed as it moves along, the river flows steadily onward through pine forests interspersed with birch, balsam, and tamarack. The stream is almost lost in Lake Bemidji, Cass Lake, and Lake Winnebagoishish but once past these broad basins it glides swiftly past Grand Rapids, Brainerd, Little Falls, and St. Cloud. Its precipitate flight through the land of ten thousand lakes once reached a thundering climax at the Falls of St. Anthony, long since displaced by a concrete dam. By the time the Mississippi reaches St. Paul it has dropped almost 900 feet in the 600-mile journey

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from its source. Already it has flowed a hundred miles farther than the renowned Seine, and three times as far as the historic Jordan in its entire course. And yet at St. Paul this Great River has only begun its journey to the sea.³²

This is the Mississippi of Longfellow's "Hiawatha" that lay beyond the "shining Big Sea Water". This is the river of the Mammoth Elk, ruler and adviser of all the northern animals. This is the river of legendary Paul Bunyan and his mighty Blue Ox. Through this region (if we would believe the inscription on the fantastic Kensington Rune Stone) a group of Norsemen fled in 1362, fully 130 years before Columbus discovered America. Through this region Radisson and Grosseilliers traveled more than a decade before Joliet and Marquette discovered the upper Mississippi. To this wild country in historic times came such men as Duluth, Michel Aco, Louis Hennepin, Zebulon M. Pike, Lewis Cass, Giacomo C. Beltrami, Henry R. Schoolcraft, J. N. Nicollet, and many other notable characters.³⁸

Leaving the land of ten thousand lakes, the Mississippi flows southward for 660 miles from the Falls of St. Anthony to the mouth of the Missouri. This is the Mississippi of Joliet and Marquette, of Nicolas Perrot, of Pierre Charles Le Sueur, of Jonathan Carver and Peter Pond, of fur traders, adventurers, and empire seekers. Here reverberated shots fired in the American Revolution and the War of 1812. Near the banks of this historic waterway the Sauk and Fox Indians located their village of Saukenuk, in defense of which they colored the great river with their blood.

Along this highway Thomas Jefferson and James Madi-

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son erected a string of military posts: Fort Edwards at the mouth of the Des Moines; Fort Madison — the first American fort in Iowa; Fort Armstrong at the foot of Rock Island; and Fort Crawford at Prairie du Chien. Zachary Taylor, Winfield Scott, Jefferson Davis, and Robert E. Lee are but a few of the famous names in American military and political history associated with this region.

Between the Falls of St. Anthony and the mouth of the Missouri the Mississippi winds through a valley that bears mute evidence of millions of years of geological evolution. Towering ramparts stand like sentinels on guard — Barn Bluff, Point No Point, Maiden Rock, Trempealeau, Dresbach, Capoli, Pike's Peak, Eagle Point, Cap au Gris, Elsay, and Piasa Rock. During the course of its 660 mile journey from St. Paul to St. Louis the Mississippi drops from 680 to 384 feet above the sea level. In width, but not in depth, this middle section of the Father of Waters actually surpasses the lower Mississippi. And small wonder, for on its way it has been nourished by the St. Croix, the Chippewa, the Black, the Root, the Upper Iowa, the Turkey, the Maquoketa, the Wapsipinicon, the Rock, the Cedar-Iowa, and the Skunk. In addition to these it has been fed by such streams as the Minnesota, the Wisconsin, the Des Moines, and the Illinois, rivers which in length surpass the Delaware and the Hudson. Eighteen miles above St. Louis the Mississippi receives the muddy waters of the Missouri whose yellow silt has been pilfered from the soil during the course of its almost three-thousand-mile journey from the Rocky Mountains. Despite the great length of the Big Muddy, that stream contributes only about two-thirds as much

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water to the lower Mississippi as does the upper Mississippi.³⁴

From the mouth of the Missouri to the Gulf of Mexico the Mississippi enters the final stage of its journey to the sea. For more than 1200 miles it flows past cotton plantations and squalid homes of negroes and poor white folk. This is the Mississippi of De Soto and La Salle, of Antoine Crozat, of John Law and the Mississippi Bubble. Here courses the Mississippi that tempted Aaron Burr, led Fulton and Livingston to dream of monopoly, and inspired Andrew Jackson in his heroic defense of New Orleans. Down this mighty waterway went the youthful Lincoln to get his first glimpse of the slave block. Around towering Vicksburg the remorseless Ulysses S. Grant forged a ring of steel that split the Confederacy in twain and doomed the cause of the South. Along this great highway Mark Twain piloted his steamboat, gleaning the rich experiences for his *Life on the Mississippi*. The Mississippi flows through the land of tuneful *Showboat*, of lilting *Naughty Marietta*, of swash-buckling *LaFitte the Pirate*, of adventurous *Anthony Adverse*, of idyllic *Evangeline*, and of the modern Cajun descendants of the Acadians.³⁵

Places of rare beauty and great historical interest may be seen in the 180 miles from St. Louis to the mouth of the Ohio. Then, for over 1000 miles below Cairo it winds through a level flood plain from fifty to one hundred miles wide. Mighty tributaries like the St. Francis, the Arkansas, and the Red rivers join the swirling waters to whose volume the Ohio has contributed fully 31 per cent, the upper Mississippi about 19 per cent, and the Missouri only 14 per cent. Flood losses along the lower Mississippi are im-

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mense: in 1922 they were estimated at \$17,087,790; in 1927 at about \$285,000,000; and in 1937 flood losses along the Ohio and lower Mississippi reached a staggering total in excess of \$300,000,000.⁸⁶

The Great River and its fifty-four navigable tributaries furnish about 14,000 miles of waterways which border or traverse twenty-seven States, seventeen of which are entirely within the Mississippi drainage system. During low water the lower Mississippi discharges into the Gulf of Mexico about 70,000 cubic feet of water per second, compared with 2,300,000 cubic feet during flood stage. It has been estimated that the river transports nearly a billion tons of silt annually to the Gulf.⁸⁷

The magnitude of the ever-rolling Father of Waters has struck European as well as American travelers with awe. Many colorful personalities have told their impressions of the Mississippi River and its wonderful valley. Literary notables like Charles Dickens, Harriet Martineau, Captain Frederick Marryat, and Frances M. Trollope; courageous soldiers such as Captain Amos Stoddard, Major Stephen H. Long, Major Thomas Forsyth, and Colonel Stephen Watts Kearny; adventurous foreigners such as Giacomo C. Beltrami, George W. Featherstonhaugh, Charles Augustus Murray, and Ole Rynning; artists like George Catlin and Henry Lewis; naturalists like John James Audubon and Thomas Nuttall; geologists like David Dale Owen; geographers like J. N. Nicollet; these and many more left records of their wanderings in the West.

Still another type of chronicler described the Great Valley. Prior to the Civil War the Mississippi River and

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its tributary streams was the "promised land" to which ambitious settlers swarmed, armed with one or more of the scores of gazetteers and emigrant guides that were being published both in the United States and in Europe. Zadok Cramer and Samuel Cumings both prepared useful charts for navigators of the intricate western waters. Calvin Colton, John M. Peck, Henry S. Tanner, and John Regan were among the many writers who prepared emigrant guides.³⁸

Travelers were almost universal in their praise of the "Great River" of the Ojibway. "The Mississippi!" exclaimed one native son enthusiastically, "the great big rollin', tumblin', bilin', endless and almost shoreless Mississippi! There's a river for you! I don't care what John Bull may say, or any other ruffle-shirted fellow, about their old castles with their bloody murder legends. I tell you the United States is a great country! There ain't nobody else but Uncle Sam as could afford such a river as that!"³⁹

When Zadok Cramer published *The Navigator* in 1811, he paid a fitting tribute to the Father of Waters. "This noble and celebrated stream," he declared, "this Nile of North America, commands the wonder of the old world, while it attracts the admiration of the new."⁴⁰ In that same year Henry M. Brackenridge made a keelboat trip from St. Louis to New Orleans. According to Brackenridge the Mississippi justly ranked "amongst the most magnificent rivers in the world: whether we consider its magnitude, the astonishing number and consequence of its tributary rivers, or the amazing scope of fertile land which

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it traverses; watering at least a fourth of the habitable part of North America.”⁴¹

The “gigantic features” of the “majestic” upper Mississippi thrilled William H. Keating as he journeyed upstream in 1823. The rolling waters of the turbid stream presented a “spectacle” that “always filled the mind with awe and with delight.”⁴² Pioneers seeking to stake out claims or lay out town sites were equally delighted with the upper Mississippi. Christiana Holmes Tillson related the following incident which occurred in 1821. “One old gentleman — a good Methodist — followed the course of the Mississippi, and the farther north he advanced the more enthusiastic he became in admiration of the country, and when he arrived at the point where Quincy now is, and clambered to the top of the high mound that overlooked the noble river, his raptures knew no bounds, and throwing up his arms he exclaimed: ‘Glory, glory, glory! I’m on the Mount! the Mount! I’m on the Mount of Glory!’ ”⁴³

Giacomo Constantine Beltrami, the Italian exile and adventurer, was aboard the *Virginia* in 1823 when that craft made the first steamboat voyage between St. Louis and Fort Snelling. While he failed in his effort to discover the source of the Mississippi, Beltrami was the first explorer to travel virtually the entire length of the Father of Waters. After hailing the Mississippi as the “Queen of North America”, he challenged his readers to dispute his claims. “Judge now whether another such river can be found on the globe which thus communicates with every sea and at various points, which combines so many wonders with such great utility, which surveys more than one hundred steam-boats

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gliding over its waters, with an infinite number of other vessels freighted with the productions and manufacture of both worlds, and to which futurity promises such brilliant destinies. Judge whether the Mississippi be not the first river in the world!" ⁴⁴

Long before the Louisiana Purchase, Patrick Henry expressed his appreciation of the value of the Mississippi. "Cast your eye, sir," he told a fellow-countryman, "over this extensive country and see its soil intersected in every quarter with bold, navigable streams, flowing to the east and to the west, as if the finger of heaven were marking out the course of your settlements, inviting you to enterprise and pointing the way to wealth." ⁴⁵

A half century later an Illinois editor confirmed the prophecy of Patrick Henry. "The great Valley of the Mississippi", the *Alton Spectator* of January 27, 1833, asserted, "has long been a reservoir, towards which has set a full, ceaseless, and increasing tide of emigration. Its vastness may be partly appreciated when we remember that the thousands and thousands which have flowed into it, are almost lost in the immensity of its extent, nor are its powers of reception seemingly diminished. But familiar as we are with the idea of the greatness of this Western territory, it is startling to reflect on the population which will, probably within our lives, swarm there by millions. Computing by the former increase of the inhabitants of the Great Valley, and by the ratio of our increase, it will have, at the expiration of the period during which New England has been gaining two millions, the enormous population of two hundred millions!" ⁴⁶

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Transportation in this Great Valley, for almost a half century following the founding of St. Louis in 1764, was limited to such craft as the canoe, the bateau, the pirogue, the flatboat, and the keelboat. A new era was ushered in with the arrival of the steamboat *New Orleans* from Pittsburgh at the port of New Orleans on January 10, 1812. Thereafter cotton, tobacco, hemp, whisky, grain, fruit, pork, lumber, lead, coffee, sugar, salt, and a miscellaneous array of merchandise formed the cargo of steam craft plying up and down the Father of Waters. By 1843 the value of the products transported downstream to New Orleans was set at \$150,000,000 annually while the upstream freight was estimated to be worth \$100,000,000. The hey-day of steamboating on the lower Mississippi was probably inaugurated in 1844 when the steamboat *J. M. White* made the round trip between St. Louis and New Orleans in nine days. The names of such boats as the *Sultana*, the *Eclipse*, the *Natchez*, the *Robert E. Lee*, and the *Grand Republic* arouse memories of halcyon days on the lower Mississippi.⁴⁷

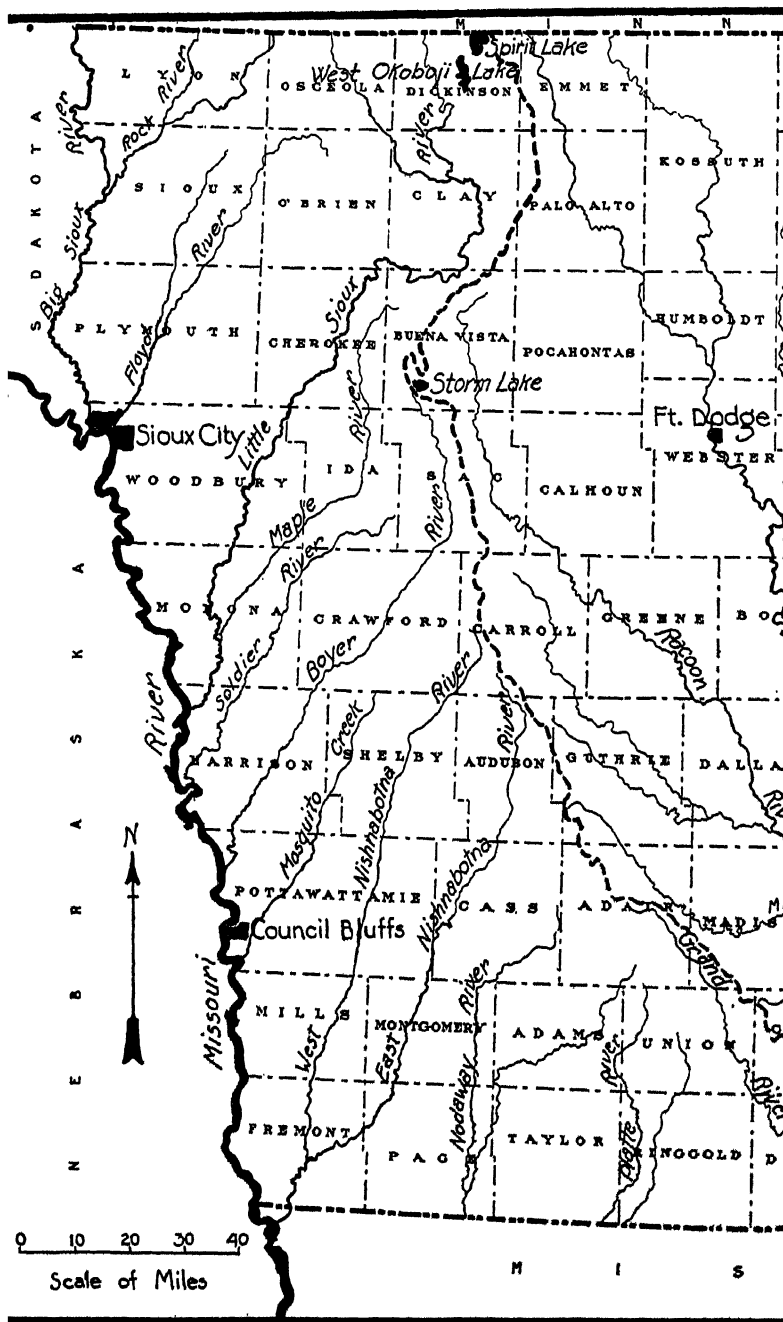
It is in the commerce of the upper Mississippi that most Iowans are interested. The history of steamboating on the upper river may be divided into four distinct periods. The lead period embraced the quarter century following the successful trip of the *Virginia* from St. Louis to Fort Snelling in 1823. The increase in the number of steamboats, together with the total number of arrivals at the lead mines, served as a barometer for judging the development of the upper Mississippi Valley. Lead cargoes surpassed all others when measured by the receipts of steamboat captains. During the period from 1823 to 1848 approximately

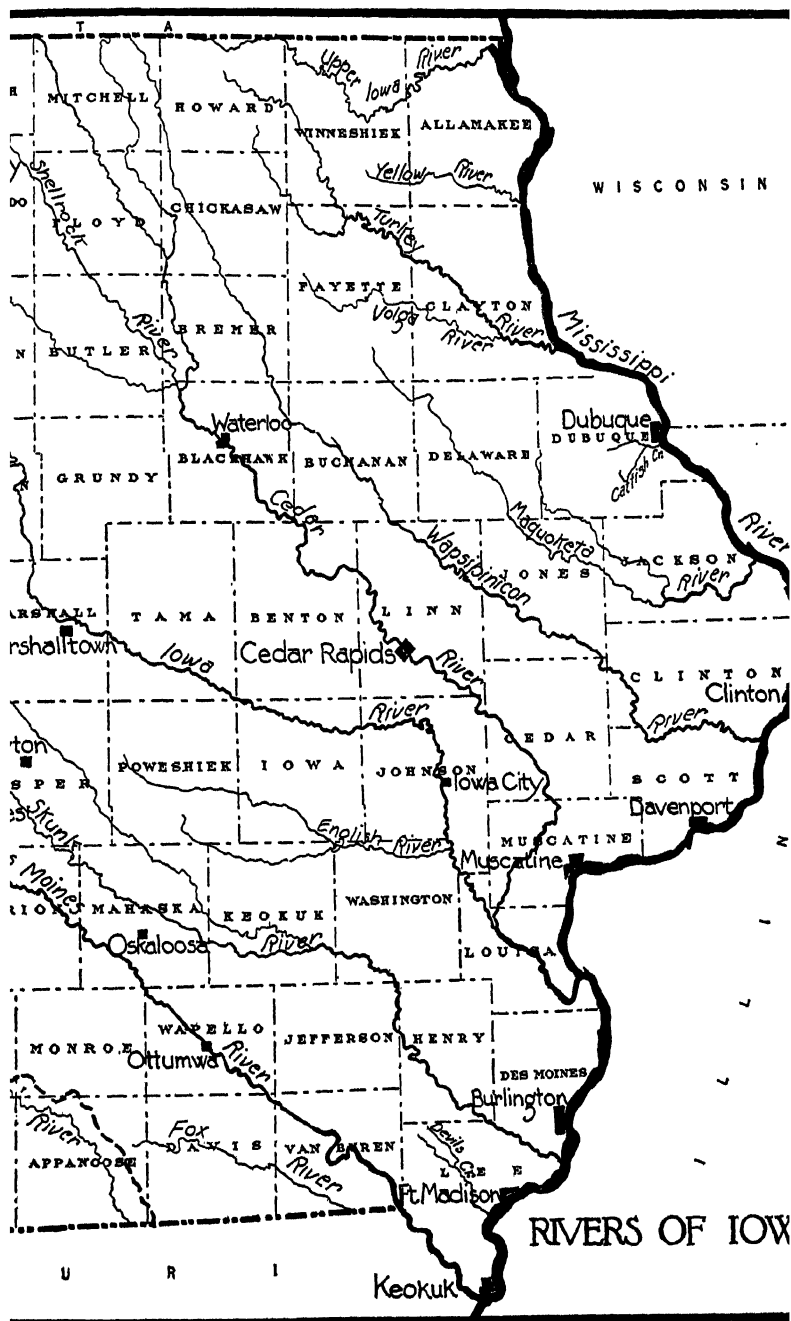
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472,000,000 pounds or 6,728,000 pigs of lead were mined and shipped down the Mississippi River by steamboat from the Galena-Dubuque mineral region. The total value of lead mined for the year 1847 alone was \$1,654,077.60 or double the combined value of the St. Louis fur trade and the commerce of the Santa Fé Trail. The total value of lead mined and shipped down the Mississippi between 1823 and 1848 was approximately \$14,178,000, and for almost a decade thereafter lead continued to be an important downstream cargo.⁴⁸

Passenger traffic was characteristic of the second period in upper Mississippi steamboating and predominated during the years from 1848 to 1870. The opening of the Black Hawk Purchase in 1833, the creation of the Territories of Wisconsin and Iowa, and their admission as States before Minnesota became a Territory in 1849 indicate the northward trend of immigration by means of the steamboat. An unknown family from Kentucky, bound for the Galena lead mines aboard the *Virginia* in 1823, was representative of this great horde of immigrants who came by steamboats. They had with them "their arms and baggage, cats and dogs, hens and turkeys; the children too had their own stock."

In the years that followed, old bills of lading showed rakes, hoes, spades, axes, grindstones, and an ever increasing number of tools and farm machinery. By steamboat came such colorful groups as the French Icarians to occupy Nauvoo, the Swedes to found New Sweden, the Dutch to settle Pella, the Trappist monks to establish New Melleray, the Luxemburgers to find a new home at St. Donatus, the





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Swiss to lay out New Glarus, the Germans to colonize Guttenberg, and the Mecklenburgers to set up a socialist community at Elkader. Between 1850 and 1870 steamboats were jammed from stern to stern with immigrants hailing from the four quarters of the Union and from many foreign countries. The California gold rush and the stampede to Oregon were dwarfed by comparison with the huge waves of land-hungry pioneers that surged up the Mississippi.⁴⁹

The third period witnessed the shipment of heavy cargoes of grain downstream. Joseph ("Diamond Jo") Reynolds was one of the first to recognize the possibilities of the grain trade, beginning operations about 1860. In 1862 he built his first steamboat, the *Lansing*, because of discrimination against his products by the Minnesota Packet Company. After the Civil War, Reynolds was in almost constant competition with Commodore William F. Davidson's White Collar Line, which absorbed a half dozen great steamboat corporations, but was unable to eliminate the Diamond Jo Line. With such boats as the *Diamond Jo*, the *John C. Gault*, the *Ida Fulton*, the *Lady Pike*, the *Bannock City*, the *Arkansas*, the *Tidal Wave*, the *Imperial*, the *Jeanette Roberts*, the *Josie*, the *Jim Watson*, the *John M. Chambers*, the *Libbie Conger*, the *Josephine*, the *Mary Morton*, the *Sidney*, and the *Pittsburgh*, "Diamond Jo" Reynolds's name became identified with the grain movement, both to Chicago and by way of St. Louis and New Orleans. A single boat, the *Imperial*, frequently handled eight barges of bulk grain in addition to her deck load, or as much as 100,000 bushels in a trip.⁵⁰

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Although the river grain trade had virtually subsided before the death of Joseph Reynolds in 1891, wheat, corn, oats, and barley constituted for a score of years the dominant freight cargo on the upper Mississippi. The period of steady decline set in after the grain era which culminated in the sale of the four remaining packets and terminals of the Diamond Jo Line to the Streckfus company in the spring of 1911. These Diamond Jo boats were subsequently converted into excursion vessels which engaged in a profitable business on the upper Mississippi, the Ohio, the lower Mississippi, and out of St. Louis.⁵¹

In 1927 the Federal Barge Line began operating on the upper Mississippi, ushering in an era of unparalleled river traffic. In 1938 this company transported 483,510 tons of freight on the upper Mississippi, or more than ten times the average yearly tonnage of the Diamond Jo Line between 1900 and 1910. On July 19 and 20, 1939, fully 31,756 tons of freight passed through the Davenport locks. By 1940 the tonnage towed by private corporations and on contract exceeded that transported by the Federal Barge Line.⁵²

Less colorful, perhaps, but fully as important as steamboating in all its various phases, was the transportation of the immense rafts of logs down the Mississippi to such towns as Dubuque, Clinton, Davenport, Moline, Rock Island, Muscatine, Burlington, Fort Madison, Keokuk, Quincy, Hannibal and St. Louis. As early as 1833 the first raft of lumber was floated down the Mississippi to Dubuque; on July 3, 1838, a raft containing 100,000 feet of pine plank arrived at Fort Madison from the Chippewa

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country. In 1840 rafting was in its infancy; by 1880 the traffic was reckoned one of the largest and most profitable industries in the United States.⁵⁸

Prior to the Civil War it was a common thing for steamboats to tow log rafts through the well-nigh currentless waters of Lake Pepin and Lake St. Croix. Not until 1865, however, did steam craft begin towing rafts all the way down the river to their destinations. By 1883 there were seventy-nine raftboats regularly engaged in towing logs down the Mississippi. In 1896 the raftboat *F. C. A. Denkmann* brought the largest log raft from Lynxville to Rock Island. The *Denkmann* raft was 270 feet wide, 1550 feet long, and contained two and a quarter million feet of logs. The largest lumber raft towed down the Mississippi was taken from Stillwater to St. Louis in 1901 by the raftboat *Saturn*, Captain George Winans commanding. This raft was 270 feet wide by 1450 feet long and contained with its top load nine million feet of lumber. In 1915 the last raft of lumber was towed down the Mississippi from Hudson, Wisconsin, to Fort Madison by the *Ottumwa Belle* in command of Captain Walter L. Hunter. Between 1837 and 1915 fully 46,974,220,170 feet of lumber valued at \$704,613,300 was rafted down the Mississippi from the Wisconsin, the Black, the Chippewa, the St. Croix, and the Mississippi above the Falls of St. Anthony.

Huge lumber mills were built along the Mississippi from Lake St. Croix to St. Louis. Of all the mills on the upper Mississippi none was greater than those located along the eastern border of Iowa: Knapp, Stout and Company and the Standard Lumber Company at Dubuque; the Clin-

The Father of Waters

ton Lumber Company, W. J. Young and Company, and C. Lamb and Sons of Clinton; the Lindsay and Phelps Mill at Davenport; the Weyerhaeuser and Denkmann interests in Rock Island; the Hershey Lumber Company and the Musser Lumber Company at Muscatine; the S. and J. C. Atlee mill at Fort Madison; and the Taber Lumber Company at Keokuk. These are but a few of the many names indelibly associated with this romantic era of the days of "Come and Get It".⁵⁴

The Mississippi Basin was described as the "body of the nation" by *Harper's Magazine* in 1863. "In extent it is the second great valley of the world, being exceeded only by that of the Amazon. . . . It exceeds in extent the whole of Europe, exclusive of Russia, Norway, and Sweden. It would contain Austria four times, Germany or Spain five times, France six times, the British Islands or Italy ten times. Conceptions formed from the river-basins of Western Europe are rudely shocked when we consider the extent of the valley of the Mississippi; nor are those formed from the sterile basins of the great rivers of Siberia, the lofty plateaus of Central Asia, or the mighty sweep of the swampy Amazon more adequate. Latitude, elevation, and rainfall all combine to render every part of the Mississippi Valley capable of supporting a dense population. As a dwelling-place for civilized man it is by far the first upon our globe."⁵⁵

A century ago one writer ranked the Mississippi as "first in importance" among the numerous "surpassing wonders" of the North American continent. He chose the Father of Waters for this exalted position because of the "luxurious

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fertility of the valley through which it flows, its vast extent, and the charm of mystery that rests upon its waters . . . There seems to rise up from its muddy waters a spirit, robed in mystery, that points back for its beginning to the deluge, and whispers audibly: 'I roll on, and on, and on, *altering*, but *not altered*, while time exists!' ” ⁵⁶

Similar impressions about Old Man River are still being expressed by men in high places far removed from its banks. On August 20, 1940, Prime Minister Winston Churchill solemnly arose in the House of Commons and announced that Great Britain had determined to lease certain possessions in the Western Hemisphere to the United States for naval bases. This action, Churchill pointed out, was simply further evidence of the “inexorable” fusion of interests between the two nations. “No one can stop it”, he exclaimed. “Like the Mississippi, it just keeps rolling along. Let it roll. Let it roll on full flood, inexorable, irresistible, benignant, to broader lands and better days.” ⁵⁷

THE UPPER IOWA

THE origin of a river is as fascinating as any story of creation — particularly if it is a river like the Upper Iowa. During three of the great epochs of the glacial period this tireless little stream has cut and worn its way through the rocks of northeastern Iowa. It has revealed a record for man to study in its sheer limestone walls which reach as far back as the age of the invertebrates. Long before the age of fishes, longer still before the age of amphibians and reptiles, millions of years before the age of mammals, the rocks were formed which this spritely stream has so exposed that geologists may read the history of the earth. Indeed, the story that the Upper Iowa tells is as old as the very hills through which it flows, as endless as time itself.⁵⁸

Of the Iowa tributaries of the Mississippi, the Upper Iowa River is the most northern. Rising just beyond the northern boundary of the Hawkeye State in the drift plains of Mower County, Minnesota, it flows through the "Switzerland of Iowa". The river falls over 700 feet during the course of its 135-mile journey, debouching into the Mississippi just below the Minnesota line in Allamakee County at an altitude of 613.5 feet above sea level. By way of comparison, the Mississippi falls only 136 feet in its 315-mile course from the mouth of the Upper Iowa to Keokuk. The Upper Iowa drains an area of 1057 square miles, 80 per cent of which lies in Iowa, chiefly in Winne-

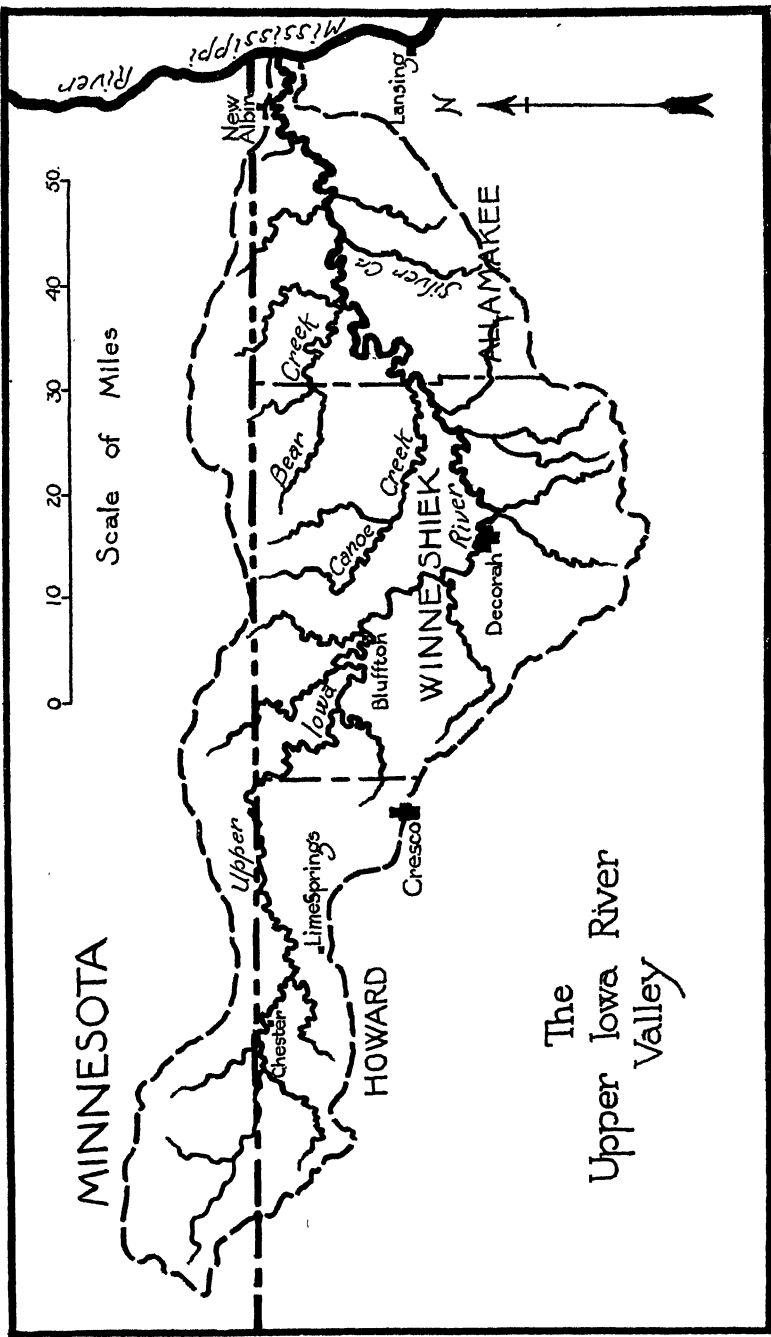
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shiek, Allamakee, and Howard counties. Although exactly the same length as the Turkey River, its narrow basin gives the Upper Iowa only two-thirds of the drainage of its neighbor to the south.⁵⁹

The headwaters of the Upper Iowa give no hint of the wild beauty of the lower valley. It is still an unimpressive stream when it enters the State in northwestern Howard County. By the time it reaches Chester, once an outlook on the old Military Ridge Road, the Upper Iowa has dropped almost a hundred feet. Five miles farther downstream a few buildings mark the old town of Lime Springs, long since removed from the river bank to the railroad a mile away. There, in the early 1850's, the pioneers brought their grain to be milled.

After it leaves Lime Springs the Upper Iowa flows through a valley of "entrenched meanders" as it skirts the southern border of Granger, Minnesota. Presently it flows back into Iowa, winding its tortuous way through rock-walled gorges and beneath towering cliffs of Galena-Trenton limestone, the lowest exposed geological formations in Howard County. It has already created a scenic wonderland by the time it enters Winneshiek County.⁶⁰

Gliding along past Kendallville's precipitous walls, the Upper Iowa reaches turreted Plymouth Rock, which stands in solemn splendor like some medieval fortress on the Rhine. At Bluffton, one of the most impressive points, the river has polished the vertical walls as smooth as masonry. Samuel Calvin well described the great vertical ramparts rising more than one hundred feet above the river. "Weathering", Calvin wrote, "has eaten in along



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the joints, widening them, dissolving and trimming off the angles, and leaving the rounded, protuberant faces of the intervening blocks as semi-cylindrical pilasters supporting the massive wall."

High in a rocky bluff overlooking the winding stream the Decorah Ice Cave offers a cool retreat to the venturesome visitor. New vitality is added to the Upper Iowa near Decorah, where crystal clear springs burst from rock and crevice to tumble down steep canyons to the river. Dunning Springs, Twin Springs, Sievert Springs — these and many more contribute charm to this natural fairyland. Such springs from secret recesses continue to feed the Upper Iowa long after other streams are parched by drouth. Well did Seneca declare: "Where a spring rises, or a river flows, there should we build altars and offer sacrifices."

Just below Decorah the Upper Iowa turns abruptly toward the northeast, twisting its way through deep-cut Galena limestone. Around Freeport the valley widens and the slopes become less precipitous because of the friable character of the St. Peter sandstone. A few miles farther the river flows between bold cliffs of Shakopee and Oneota dolomite. Throughout its course the bluffs are richly festooned with moss and ferns and heavily studded with timber — oak, hickory, elm, basswood, butternut, walnut, and canoe birch being among the more common native trees.⁶¹

The Upper Iowa enters Allamakee County through a broad, flat-bottomed valley flanked by steep bluffs, many of them 400 feet high. Almost all of these heights are crowned with bold "mural escarpments". Perhaps the most astonishing feature of the valley in western Alla-

The Upper Iowa River

makee County is the series of great loops or oxbows along which the river winds its serpentine course. This water-carved relief is characteristic not only of the main valley but of each little tributary — Waterloo Creek, Bear Creek, Canoe Creek.

The lower portion of the gorge is a mile or more in width. At New Albin the Upper Iowa joins the intricate network of channels that compose the labyrinth of lakes and bayous which occupy the broad flood plain of the Mississippi between Lansing and the Minnesota boundary. There, and throughout the eastern half of Allamakee County, the river no longer cuts its channel. Geologists say that the river has filled its valley mouth to a depth of nearly fifty feet since the close of the glacial period. At the very gateway to the valley of the Upper Iowa stand great hills, such as the Owl's Head, the Elephant, and Mount Hope, entirely separated by erosion from the surrounding uplands.

The majestic palisades of the Upper Iowa have attracted the attention of such eminent geologists as David Dale Owen, James Hall, Charles A. White, W J McGee, and Samuel Calvin. These men found it to be a valley of superlatives in beauty as well as in geological information. The river has carved the deepest gorge in Iowa, reaching depths of more than 400 feet along its lower portions. Furthermore, the high crest along its south basin rim on the Waukon-Lansing road — Lansing Ridge, Lycurgus Ridge, Iron Hill — contains "the highest land, at corresponding distances from the Mississippi river, between Saint Paul and the Gulf of Mexico." On the opposite side of the rim,

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in the vicinity of Hesper, are two hills that rise to a height of a little over 1360 feet above sea level. They are the highest points in Iowa east of the Des Moines River.⁶²

So unique is this stream among the rivers of Iowa that many have urged that the compound name, Upper Iowa, should be dropped for a more distinctive designation. During their brief sojourn in the Iowa country the Winnebago Indians, according to W J McGee, called the river "Oneota" after the giant bluff which stands guard at its mouth on the northern bank. Unfortunately the remnant of that once mighty tribe could advance no explanation as to the significance of the word. It is interesting to observe that in the Iroquoian dialect of the Mohawks the word Oneota signifies "the people who have sprung from a rock", an appropriate expression considering the rugged character of the Upper Iowa. Henry Schoolcraft was apparently familiar with the word, for in 1845 he published a book entitled *Oneota, or Characteristics of the Red Race of America*. When the white settlers arrived in Allamakee County they renamed the northern hill "Minnesota Bluff" and christened its sister promontory to the south "Iowa Bluff". For almost a half century thereafter the word Oneota was not associated with the region.

Since about 1889 geologists, following the suggestion of Samuel Calvin, have substituted the name Oneota for Upper Iowa. Calvin actually applied the name Oneota to a prominent geological formation along the bluffs of the stream. While much can be said in favor of such a change to avoid confusion with the Iowa River, it should be pointed out that historically the Upper Iowa has a better

The Upper Iowa River

claim to its common name than any other Iowa stream. It was none other than the redoubtable Nicolas Perrot who asserted that the river was "named for the Ayoës savages" (Iowa Indians) when he became French Commandant of the West in 1685. No other river in Iowa can trace its present-day name back as far as the picturesque Upper Iowa.⁶³

The Upper Iowa, or Oneota, is more than a geologist's paradise — it is also the hunting ground of the archaeologist. The beautiful terraces rising from the river bottom contain some of the rarest artifacts of prehistoric man to be found in Iowa. Indeed, specialists have given the name Oneota to one of Iowa's Indian cultures in honor of the Upper Iowa, where the finest evidences have been found. In 1934 this area in the mound builders country rewarded archaeologists digging in the New Galena mounds along its banks by disclosing a Siouan culture superimposed on the Algonquian culture. It was the first instance of culture stratification discovered in Iowa. Thus, on the banks of the swiftly flowing Oneota, had nation succeeded nation in prehistoric times.⁶⁴

The valley of the Oneota was still a favorite Indian country in historic times. More than a decade before the discovery of the upper Mississippi by Joliet and Marquette, Pierre Esprit Radisson recorded that the Huron and Ottawa Indians had fled westward across the Mississippi to escape the warlike Iroquois. Radisson did not tell where these fleeing Algonquian tribes found refuge but Nicolas Perrot threw some light on their wanderings. According to him the Ottawa ascended the Mississippi a dozen leagues

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above the mouth of the Wisconsin where they found the "river of the Iowas [Upper Iowa]. They followed it to its source, and there encountered tribes who received them kindly. But in all the extent of country which they passed through having seen no place suitable for their settlement . . . they returned to the Mississippi and went higher up that stream." The Ottawa found "prairies and smooth plains" together with an abundance of "buffaloes and other animals" in what is now Iowa.

In the years that followed, a colorful pageant of historical characters passed the mouth of the Upper Iowa. Michel Aco and Louis Hennepin, Daniel Greysolon Duluth and Pierre Charles Le Sueur, Jonathan Carver, and Peter Pond visited the region in the era before the Louisiana Purchase. At the mouth of the Upper Iowa River in 1805 Lieutenant Zebulon Pike made a treaty with Chief Wabasha. There, too, the Italian adventurer Beltrami witnessed a spectacular forest fire from the deck of the steamboat *Virginia* in 1823. From this same point was drawn the Neutral Line of 1825, a boundary separating the Sauk and Fox Indians from their enemy the Sioux. To this spot fled the vanquished remnant of Black Hawk's weary band after the bloody scenes of Bad Axe, only to be attacked by the cruel Sioux. The valley of the Oneota continued to be the abiding place of the red man after eastern Iowa was opened to settlement in 1833, for no portion of the Upper Iowa Valley was included in the Black Hawk Purchase. It was not until the departure of the Winnebago in 1848 that the first permanent white settlers established homes there among the picturesque hills.⁶⁵

The Upper Iowa River

By boat and covered wagon the sturdy American pioneers came to this land of promise. Lansing, which served as the gateway for a large number of them, had but one log cabin in 1850, but in 1854 the census taker counted 400 inhabitants. During this period the population of Allamakee and Winneshiek counties grew rapidly. Decorah was unable to accommodate those who wanted to enter lands in the Upper Iowa Valley; beds laid upon the floor were at a premium, while good prices were paid for an opportunity to "lean against sign posts or hang on a hook." Many of those who landed at Lansing were intelligent, industrious, "well-to-do-Easterners" who bought improved farms at from \$800 to \$4000 each.⁶⁶

Close on the heels of these native-born immigrants came strangely garbed foreigners — Norwegians, Germans, Swedes, Irish, and others. The Norwegians particularly have contributed to the culture and development of the region; Luther College and the Norwegian-American Historical Museum at Decorah stand as monuments to their sacrifices and their ideals.

The rugged nature of the country virtually excluded the railroad from the valley of the Upper Iowa: no other river basin in Iowa of similar size and proportions contains fewer miles of track. The precipitous topography of the valley is therefore largely responsible for its distinctly rural character. The population density averages less than sixty per cent of the rest of the State. Only one city, Decorah, is located within the basin, and this Norwegian center could count only 5303 inhabitants in 1940. Cresco is situated on the watershed between the Upper Iowa and the

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Turkey, while Waukon and Lansing lie between the Upper Iowa and Yellow river valleys.

Despite the rough nature of the country the basin drained by the Upper Iowa is a well-developed farming region. Corn and oats are the principal crops. Only 10 per cent of the cereal acreage is devoted to wheat, barley, rye, and buckwheat. Vegetables and fruit are also grown. The proportion of land devoted to crops, however, is far below the State average. Thus the eastern two-thirds of Allamakee County has only 39 per cent of its farm land acreage devoted to cultivated crops compared with a State average of 63.8 per cent.

In addition to sheep and swine, fine herds of beef cattle and dairy cows may be seen grazing in the valley of the Upper Iowa, lending color to the scenic beauty of the wooded slopes. Indeed, rich pasture lands are a distinct feature of this land of many vistas, for all northeastern Iowa belongs to the dairy area of the Hawkeye State. Farm tenancy in Allamakee County stands at 32 per cent compared with a State average of 54.8 per cent.⁶⁷

Thirteen mills were located on the Upper Iowa in 1880, most of them between Lime Springs and Decorah. Because the river gradually loses its steep gradient a few miles below Decorah, there have never been as many mills on the lower portion. Thus, in 1880 there was only one mill in the first twenty miles above the mouth, though a number of mills were located on its swiftly flowing tributaries. There are now seven dams on the Upper Iowa, six of which are still used to operate generating stations or flour and feed mills. The dam at Lime Springs is the farthest upstream; the one

The Upper Iowa River

near the Winneshiek-Allamakee County line is lowest downstream.

Like most of the small streams in the driftless area, the Upper Iowa has a "flashy" discharge. Heavy local rains are felt very quickly in its small drainage basin. Even its short tributaries are converted into torrential streams during sudden downpours, occasionally causing considerable flood damage. Indeed, it is the heavy local rains and not the spring break-up, that cause the sudden rises in this interesting stream. Physical barriers, uncertain water level, and the absence of towns discouraged steamboats from attempting to navigate the Upper Iowa in pioneer days.⁶⁸

The Upper Iowa is one of the most beautiful tributaries of the upper Mississippi. In this valley a geologist can read as from an open book the earliest records of the paleozoic era, a story begun millions of years before the first fish swam in the sea or the first reptiles crawled on land. In this valley of forgotten men the archaeologist has pushed back the evidence of Indian occupation to ancient times. At Iron Hill in Allamakee County lie buried tons of ore which dreamers hope to feed some day to the industrial centers along the Mississippi in Iowa and Illinois. Thrifty farmers and small-town business men who live in the valley of the Oneota are doubly blessed: whether in the valley or on the hilltops, their eyes are always filled with the glories of the land about them.

THE YELLOW RIVER

LONG in history but short in miles is the Yellow River, a stream well known to the white man before the signing of the Declaration of Independence. A Connecticut Yankee, Jonathan Carver, was probably the first to call attention to this picturesque stream by its present name. Carver arrived at Prairie du Chien in October, 1766, bent on exploring the interior parts of North America for the British Crown. After a few days sojourn at the "Dog Plains" (Prairie du Chien), Carver set out up the Mississippi with his French companions. "A little farther to the west, on the contrary side", he wrote afterwards in his book of travels, "a small river falls into the Mississippi, which the French call *Le Jaun Rivière*, or the Yellow River. Here the traders who had accompanied me hitherto, took up their residence for the winter. I then bought a canoe, and with two servants, one a French Canadian and the other a Mohawk of Canada, on the 19th proceeded up the Mississippi." ⁶⁹

In the years that followed, many noted travelers called attention to Carver's Yellow River. Bound for the headwaters of the Mississippi in 1805, Lieutenant Zebulon M. Pike found the "Yellow river, of about 20 yards wide, bearing from the Mississippi nearly due W[est]." ⁷⁰ Twelve years later, in 1817, when Major Stephen H. Long made a voyage in a six-oared skiff to the Falls of St. An-

The Yellow River

thony, he "Passed Yellow River on our left, about two miles" above Fort Crawford. He reported that it was "navigable for pirogues, in time of high water, about fifty miles from its mouth."⁷¹ Giacomo Beltrami and William H. Keating passed the mouth of the Yellow River in 1823. Both men mentioned Paint Rock, just above the mouth of the Yellow River. Moreover, the map accompanying Keating's narrative of Major Stephen H. Long's expedition of that year accurately locates the Yellow River.⁷²

This was not the first time the Yellow River had been charted. Jonathan Carver showed the "Yallow River" on his map of 1778. Victor Collot recorded it in 1796 and Samuel Lewis included it on his map of Louisiana in 1804. Geographical information was of course vague, since details were often supplied by imagination. Perhaps the frequency of historical reference to the Yellow River exaggerated its importance in Lewis's opinion for he indicated its source in a lake somewhere in the vicinity of present-day Marshalltown. The river as Lewis represented it was virtually as long as the Wisconsin River and much longer than the Iowa River.

Zebulon M. Pike's map of the Mississippi River published in 1810 accurately located the Yellow River. It was shown to be emptying into the Mississippi from the west a short distance above the mouth of the Wisconsin. The errors contained in the map of 1804 were corrected and the river was reduced to its proper relative size. Henceforth the Yellow River was invariably included on maps of the upper Mississippi. Lieutenant Albert M. Lea, for example, in publishing his *Notes on Wisconsin Territory*,

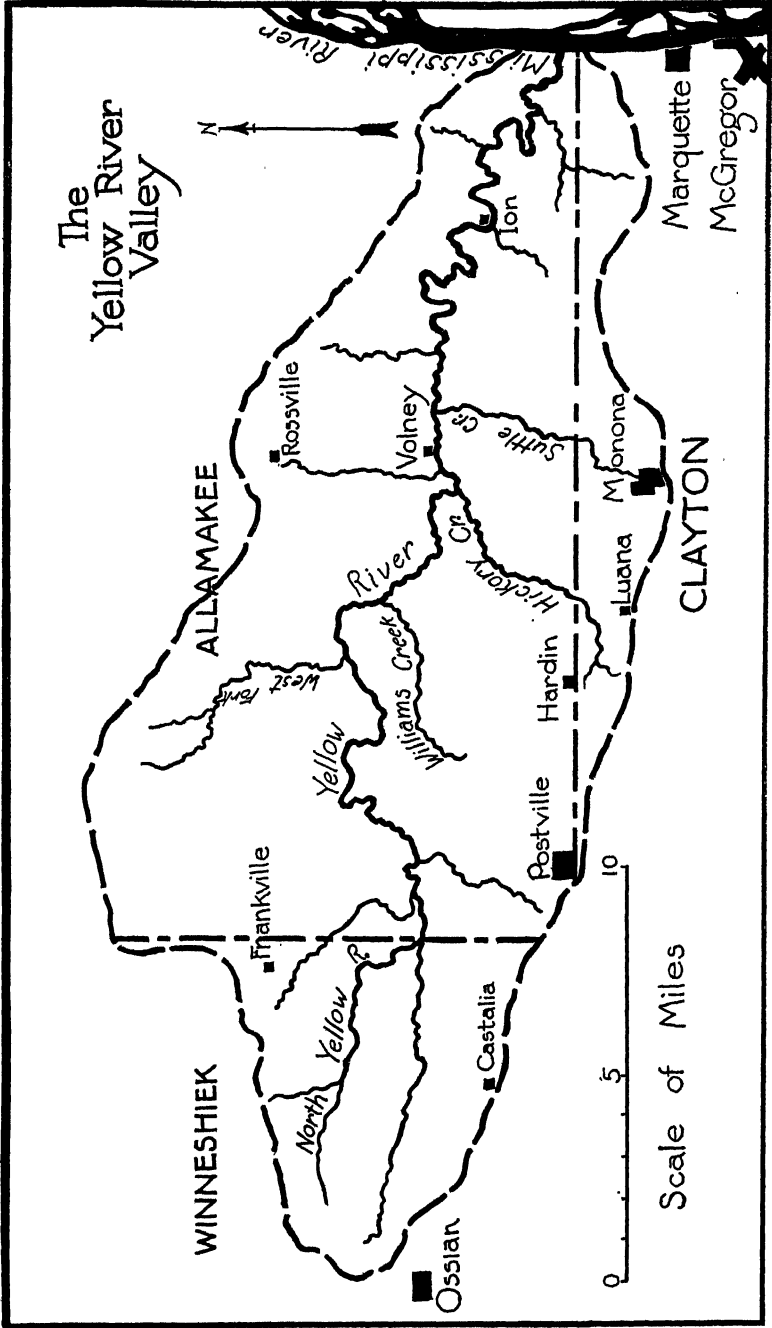
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with a Map, in 1836, did not fail to record the famous little stream on his map.⁷⁸

Although the Yellow River was well known by name, its physical characteristics remained undiscovered for many years. Though the great route of exploration along the Mississippi passed its very door, little accurate information was obtained about this precipitous inland stream. Indeed, had the first explorers ascended the river any distance it is likely the Yellow River would have received a different name, for only the water at the mouth of the river possessed a muddy, yellow appearance. Few streams have clearer water than the Yellow River.⁷⁴

The Yellow River rises among the "numberless terminal twigs" that spread out "fan-like" in southeastern Winne-shiek County. The main branch of the river extends westward to within almost a stone's throw of Ossian, which occupies an elevation of 1271 feet above sea level on the Cresco-Calmar ridge. Despite its small size (the stream is only forty-four miles long and has a basin of only 235 square miles) the Yellow River is an exceptionally beautiful stream. The canyon is narrow and steep-sided, with an exceedingly tortuous gorge. Throughout the greater part of its course the river flows over a rocky bed covered in some places by thin layers of clay deposited by the annual spring freshets.

A distinctive characteristic of the Yellow River is its precipitate descent, the incline in one section being 27.6 feet per mile, three times as great as that of the Upper Iowa. Only Paint Creek, Village Creek, and the Little Maquoketa exceed the Yellow River in the rapidity of their



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flight to the Father of Waters. It would take strong arms and stout hearts, Stephen H. Long's journal to the contrary notwithstanding, to ascend the swirling Yellow River in flood times.

Throughout its course the Yellow River is joined by numerous minor streams. In fact, geologists assert that the Yellow River is the best example of the "widely branching dendritic type" of waterway, a form generally assumed by streams in unglaciated or geologically old regions. According to W J McGee such waterways have a relatively broad basin, and their tributaries are numerous, widely branching, and so uniformly distributed that their entire basins are effectively drained. Eleven streams in northeastern Iowa — Village Creek, Paint Creek, Yellow River, Bloody Run, Snymagil, Buck Creek, Little Maquoketa, Catfish Creek, Tête de Mort, the North Fork of the Maquoketa, and Elk Creek — fall wholly into this class.⁷⁵

Because of its narrow bed and swift descent the Yellow River was recognized by early settlers as an ideal stream to harness for water power. Mills were located at many points. As a matter of fact the first water mill in Iowa was built on the Yellow River in 1831 by troops from Fort Crawford. This mill was located about three miles above the mouth of the river and was operated at first by Lieutenant Jefferson Davis. For a number of years this sawmill fairly hummed with activity as oak timbers were cut from the woods nearby and pine logs were floated down the Mississippi from the Chippewa to be converted into lumber for the second Fort Crawford. A few years later, its work done, the mill finally burned to the water's edge, like an

The Yellow River

ill-fated Mississippi steamboat. Posterity has appropriately named this mill on Yellow River the Jeff Davis Mill, in honor of the young soldier who was destined to become the President of the Confederate States of America.⁷⁶

The Yellow River is also noted for the Winnebago Mission School which stood a few miles up the river from Jefferson Davis's sawmill. Opened in the spring of 1835 by Indian Agent Joseph M. Street, the school on Yellow River was in charge of the Reverend David Lowry, a Presbyterian minister appointed superintendent of the school by President Andrew Jackson. It was a good, plain structure, built of stone, a veritable landmark in a sparsely settled valley. The peak of enrollment was reached in 1839, when seventy-nine Indian boys and girls attended classes. In the following year some visitors from Prairie du Chien expressed astonishment at the orderly and effective manner in which the school was conducted. But on October 1, 1840, Lowry received orders to sell the building and reestablish the school on the Turkey River in the Neutral Ground.⁷⁷

The earliest settlements in Allamakee County were made in the valley of the Yellow River. The land on which the old Winnebago Indian Mission stood was sold to John Linton in 1842. Not long afterward, Thomas C. Linton, the organizing sheriff of Allamakee County, acquired this tract from his brother when the latter decided to practice medicine. On April 4, 1844, the Clayton County commissioners established the "Yellow River precinct" and in the following year the first election in Allamakee County was held in "the house of Thomas C. Linton, on Yellow

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River". During the fifties such towns as Nezeke, Ion, Buckland, Volney, Smithfield, and Manchester — none of which now exist as towns — were located and platted on the banks of the Yellow River. In 1859 a traveler described Volney as sitting "squat like a toad" on the "north shore".⁷⁸

Optimism reached its apex on October 10, 1856, when the Mississippi and South Pass Railroad Company was incorporated for the purpose of constructing a railroad from the Mississippi "at or near the Yellow river" through the Territories of Minnesota and Nebraska to South Pass in western Wyoming, over a thousand miles away. No railroad, indeed no primary highway, has ever been built up this winding valley.⁷⁹

They were brave days when those early settlers pioneered in the valley of the Yellow River a century ago. Now the shimmering stream is known as the "River of Lost Mills". Gone are the turning water wheels that made the valley one of the "liveliest industrial centers west of the Mississippi". Gone too are the paper towns whose progenitors once dreamed of stately buildings gracing flourishing metropolitan centers. The entire population of the four southern Allamakee County townships through which the river flows is less than that of Waukon at the headwaters of Paint Creek. Not a single town located on the Yellow River has a population sufficient to be recorded as urban (2500 or more) in the Federal census. Only the river itself flows on — just as it did when Jonathan Carver visited the region one hundred and seventy-five years ago.⁸⁰

THE TURKEY RIVER

ON APRIL 19, 1775, the embattled minute men of Lexington and Concord fired the "shot heard round the world". Five years later, in 1780, the reverberations of that battle were echoed on the eastern border of what is now Iowa when the British attacked an armed American barge that was nosing its way slowly up the Mississippi River near the mouth of the Turkey River. That was the scene of the only naval engagement of the Revolutionary War fought along the eastern border of Iowa.

The American boat, owned by Charles Gratiot and loaded with furs and provisions for Prairie du Chien, was proceeding upstream under a "Spanish Pass". The crew was unaware that this important fur center had fallen into enemy hands. On the other hand, the British had learned of the presence of the boat and the commandant accordingly sent troops to intercept it. Led by Lieutenant Alexander Kay, they easily captured the boat and its crew of "twelve men & a Rebel Commissary" at the mouth of the Turkey River. It was a valuable prize, for the British used a part of the peltry and "all the Provisions, Tobacco, Rum, &c." to equip a party of Canadians and Indians for their attack on St. Louis.⁸¹

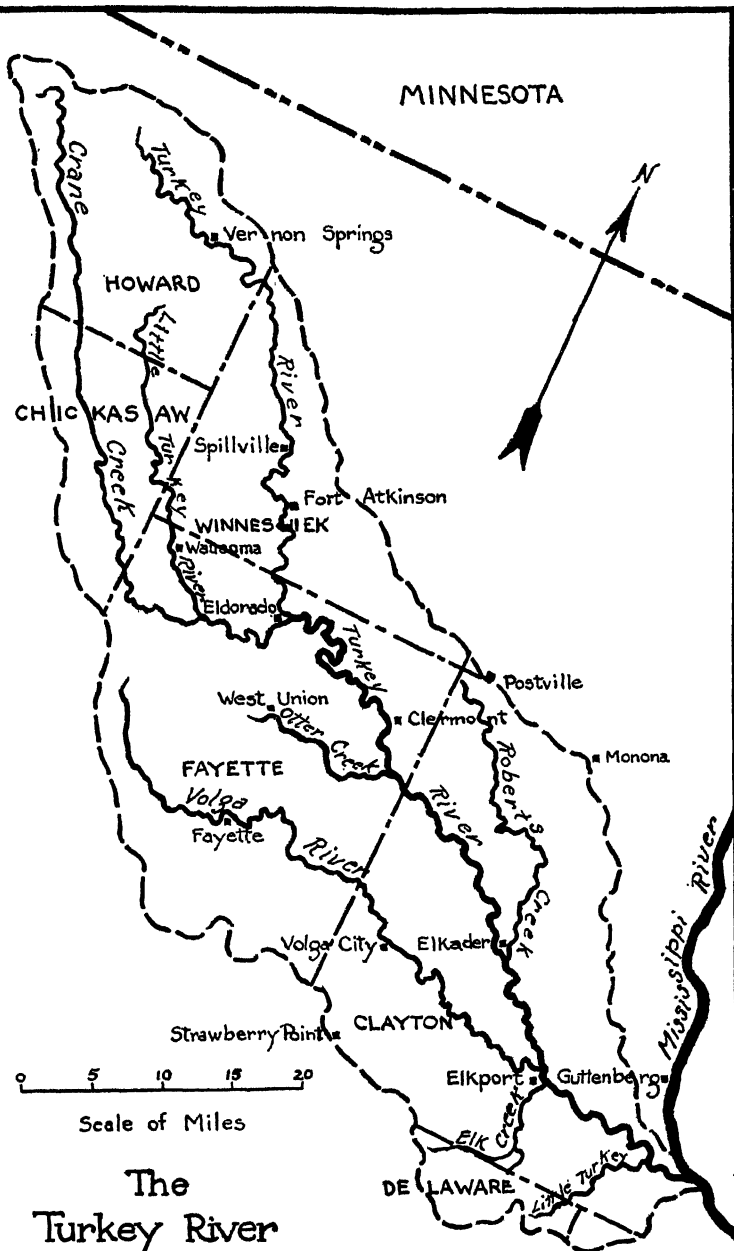
Like its sister streams in northeastern Iowa the Turkey River has had a colorful history. The picturesque waterway apparently received its name from the large number

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of turkeys which were found in the valley. The Sauk and Fox Indians referred to the stream as the "Penakunsebo" which, translated, means Turkey River. This name was adopted by the French though they substituted their own word for turkey and said *Rivière au Dinde*. The persistence of the French name is attested by the fact that even as late as 1814 Captain Thomas G. Anderson referred several times to the arrival at Prairie du Chien of a "party of Renards" from the "Rivière au D'Inde".⁸²

It is more difficult to determine just when the Turkey River was specifically named and located by cartographers. William Delisle's map of 1718 showed a two-forked river like the Turkey-Volga system but failed to identify it. Pike's map of 1810, Clark's map of the same year, and Arrowsmith's map of 1814 are among the earliest to name and locate the Turkey River. A Fox Indian village was shown at the mouth of the Turkey on each of these maps. Lieutenant Albert M. Lea referred to the "Penaca or Turkey" River on his map of 1836. J. H. Colton's map of 1839 was perhaps the first to locate and designate the Volga River, a name which appears quite regularly on subsequent maps.⁸³

Such maps were based on information reported by the earliest travelers on the upper Mississippi. Thus Jean B. Perrault visited the Sauk village at the mouth of the Turkey River during the summer of 1783. On September 2, 1805, Lieutenant Zebulon M. Pike "encamped on the E. side opposite to the mouth of Turkey river." Another army officer, Thomas Forsyth, pitched his camp "about three miles above Turkey river" on July 3, 1819. In his



The
Turkey River
Valley

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journal Forsyth recorded: "Distance to-day 24 miles, which was a good day's journey, as I was detained about an hour at the Fox village giving the Indians some presents." In the following year Stephen W. Kearny sped past the mouth of the Turkey River, below which he saw a deserted Indian village of twenty lodges on the east bank. Kearny also observed "many Pelicans, which at a distance make a very handsome shew".⁸⁴

Foreign visitors likewise left their impressions of the Turkey River. In the spring of 1823, the Italian adventurer Beltrami wrote: "A little above the river Turkey, which flows from the west, and is navigable to a considerable distance inland, is an old village which the Foxes have deserted. Here terminates the pretended territorial jurisdiction of these savages".⁸⁵ A dozen years later an English traveler, Charles Augustus Murray, joined some officers from Fort Crawford bound for a hunting expedition on the headwaters of the Turkey River. Unfortunately the Indians, resenting this intrusion by the white men, drove the game away by discharging their guns and setting the grass on fire. Murray's opinion of the valley of the Turkey River may well be left unrecorded.⁸⁶

During the late forties an English-born artist, Henry Lewis, painted a panorama of the Mississippi from the Falls of St. Anthony to New Orleans. This gigantic undertaking was executed on a canvas twelve feet high and 1325 yards long. A decade later Lewis published an account of these paintings in a fascinating volume printed in German — *Das Illustrierte Mississippthal* — wherein he called attention to the "Truthahn" or Turkey River flowing into

The Turkey River

the Mississippi eight miles below Prairie La Porte, the original name of Guttenberg.⁸⁷

In 1835 about fifty pioneers moved into the valley of the Turkey River, the only portion of Clayton County inhabited by white men that year. Their presence led Lieutenant Albert M. Lea to observe optimistically: "The Turkey river is navigable about thirty miles, for any steam-boat on the Upper Mississippi. The finest soil, the finest timber, and the finest mines are to be found on this river of all that lie within the mining region. For agricultural purposes alone, it is highly desirable; but if the mineral wealth beneath the soil be considered, it is not wonderful that crowds of emigrants should be hastening to it, as they now are."⁸⁸

Less flattering but perhaps more accurate was Jesse Williams's account of the valley of the Turkey River in *A Description of the United States Lands in Iowa* published by J. H. Colton in 1840. After pointing out that the Turkey was "a handsome stream, but not navigable", Williams concluded: "The bottoms along Turkey river are mostly narrow and subject to inundation. The bluffs south of Turkey river are steep and broken by numerous ravines, which render the country back for the distance of two or three miles unfit for cultivation."⁸⁹

In 1865 William D. Wilson published his "valuable guide" to immigrants, entitled *A Description of Iowa and Its Resources*. He believed Clayton County and the Turkey Valley offered great inducements for the agriculturist and manufacturer. "Turkey river", Wilson declared, "is among the most beautiful and placid streams in the State,

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and is celebrated for its numerous geological specimens, and the picturesque scenery of its banks and dells. It affords most excellent water power for mills, and is navigable the greater part of the year as far up as the forks, at Elkport. . . . Improved farms can be had for fifteen to thirty-five dollars per acre, unimproved lands from five to fifteen dollars per acre, and timber land at ten dollars per acre. Mechanics' wages are three dollars per day." Wilson was equally enthusiastic about the country at the headwaters of the Turkey in Fayette and Howard counties.⁹⁰

Despite the extravagant claims of early gazetteers, the valley of the Turkey River never yielded noteworthy returns from mineral resources. On several occasions, however, excitement ran high over the prospect of gold mining. Traces of gold were discovered in Otter Creek near West Union in 1858. In the following year the sons of William Wells washed a dime's worth of gold from a panful of Otter Creek dirt. "That there is gold in this country", the West Union *Public Review* declared, "is an indisputable fact, which was tested as long ago as last Summer; but that it will pay much to gather it, is not sure by any means. We have no doubt, however, that there is nearly as much ground for raising a sensation here respecting the gold as there is at Pike's Peak." Although minute quantities have been found in Maine Creek, Brush Creek, Otter Creek, and in the Volga River near Fayette, only a few men have prospected for it.⁹¹

Not from rich lead or gold mines did dwellers in the basin of the Turkey River derive their modest wealth: sand, gravel, crushed rock, and clay were relatively more

The Turkey River

important. Not because the region offered favorable conditions for industrial development did it grow rich: no metropolis sprang up in the pleasant valley. Not because the Turkey and its tributaries offered a highway for transportation and communication did the inhabitants prosper: steamboating was impracticable and only a few keelboat loads of flour were ever shipped down the Turkey to Cassville and Dubuque. Rather it was the fertile soil and well-tilled fields that made a cornucopia of the Turkey River Basin. In 1929 the value of the corn, oats, barley, rye, and other grains produced there was computed to be \$2,300,000. During that year the income from dairying totaled \$4,300,000 in the hilly Turkey Valley.⁹²

It was just such abundant harvests that caused the population of the Turkey Valley to total 48,606 in 1930, or twenty-nine persons per square mile. There were no large cities in this watershed, the seven largest towns ranging from Postville with 1060 inhabitants to Cresco with 3069. Only three towns — West Union, Elkader, and Fayette — were located on the river or its major tributaries. Four others — Cresco, Postville, Monona, and Strawberry Point — were on the divides separating the valley of the Turkey River from adjacent basins. The population of the region is distinctly rural: two-thirds of the people live on farms. Although more populous than the Yellow River Valley, the density of population in the basin of the Turkey River is only two-thirds that of the average for the State of Iowa.⁹³

What of the size of this fertile valley? The Turkey River is 135 miles long and occupies a valley averaging

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twelve and one-half miles in width. The basin contains 1696 square miles — three per cent of the total area of Iowa. This represents an area seven and one-half times as great as the basin of the Yellow River and twice as large as that portion of the Upper Iowa Valley lying within the Hawkeye State.⁹⁴

A distinctive feature of the Turkey River is its excellent tributaries — the Volga, the Little Turkey, and Crane Creek. The basins drained by these tributaries range from 214 square miles for Crane Creek to 408 square miles for the Volga River. The large basin of the Volga is all the more surprising in consideration of the fact that the river itself is only thirty-three miles long.

A student at Upper Iowa University once referred to the "classic" Volga in a poem. The river rises near the western border of Fayette County and flows eastward through an ever-deepening valley cut to a depth of 300 feet below the upland plains. Around Wadena and Albany the narrow, rock-walled gorges are especially impressive, while at Mederville in Clayton County the stream passes through a rock-bound gorge scarcely 100 feet wide and more than 300 feet deep. The Volga joins the Turkey 18.2 miles from the Mississippi.

Although the basin of the Little Turkey is not as large as that of the Volga the stream is longer. Rising amid low-lying hills near the source of the Turkey River in Howard County, the Little Turkey pursues an unimpressive course through Chickasaw and Winneshiek counties, gradually cutting deeper into the limestone until, just below Waucoma, it attains a depth of 300 feet. The Little Turkey

The Turkey River

joins the Turkey just above Eldorado, 76.2 miles above the mouth. Its 354 square-mile basin is a larger area than is drained by the Turkey above their common junction. The narrow gorge of the Little Turkey at the confluence is in sharp contrast to the broad and luxuriant valley in which the town of Eldorado nestles.

Crane Creek, a tributary of the Little Turkey, is a stream almost as long as the Yellow River. It pursues a course virtually parallel to the Wapsipinicon River until it swings suddenly eastward to join the Little Turkey in Fayette County. This sliver-like waterway maintains a shallow valley through Howard and Chickasaw counties but cuts deep into Niagara limestone during the last three miles of its journey.⁹⁵

The Turkey River and its tributaries have experienced numerous floods, most of them of short duration, a common characteristic of the smaller streams of northeastern Iowa. Two destructive floods occurred in 1865, which old-timers described as the highest water ever known at Elkaeder. In the following year a damaging freshet in the turbulent Turkey "could be heard thundering a mile distant."⁹⁶

A June flood in 1880 devastated the country for almost 100 miles along the course of the Turkey. At Spillville the warehouse and mill flume were swept away. At Fort Atkinson the depot was destroyed and the railroad track was washed out for a distance of 300 yards. The railroad from West Union to Postville was described as a "complete wreck", while the sea of water at Elkport and Osterdock compelled citizens to paddle through the streets in boats.

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Throughout the valley farms were inundated, fences and buildings were swept away, and chickens, hogs, and other livestock were drowned.⁹⁷

During the next twenty years seven more floods were recorded. And then, in 1902, a Dubuque newspaper reported that the Turkey River had risen two feet higher than any previous records showed. Bottom lands were inundated, crops were destroyed, and "everything imaginable" was swept away. The heavy rains that caused this flood also affected the Mississippi which rose twenty inches in twenty-four hours!⁹⁸

Between 1915 and 1930 eleven floods were recorded on the Turkey River by government observers. Since winter precipitation in this region is usually light and large spring freshets relatively rare, the worst floods have been produced either by light rains falling on frozen ground or by heavy early summer rainfall. The average annual precipitation in the Turkey River Basin from 1898 to 1929 inclusive was 33.39 inches, or slightly more than the average for the entire State. The highest maximum annual precipitation was 50.08 inches in 1902; the least was 20.58 inches in 1910. The greatest rainfall generally occurs from May to September.

By establishing stream-flow gages at Garber, Elkader, and Eldorado, observers have been able to determine the rise and fall of the Turkey with precision. The average daily stream flow at Garber is 970 cubic feet per second while the lowest average daily water flow is only 75 cubic feet per second. Contrast these figures with the high-water flow on February 23, 1922, when the turbulent Turkey

The Turkey River

discharged 25,300 cubic feet per second at Garber. The greatest discharge at Elkader was 25,200 cubic feet per second on March 16, 1929.⁹⁹

Such torrential floods have usually been most damaging to crops, but heavy losses have been sustained when buildings and bridges were swept away. For example, in 1918 the Turkey River went on a rampage which devastated little Millville on the lowlands near the mouth of the stream. Crops were ruined, Philo Kenyon's store and warehouse and the blacksmith shop were wrecked, several other buildings were damaged by the high water, and wagons, buggies, and automobiles were carried off on the crest of the flood. In 1922 Garber and Elkport suffered losses estimated at nearly \$100,000 when the Turkey left its channel and hit town and country with "a broad side of rushing water". The devastation wrought was said to be greater than that caused by the flood of 1902.¹⁰⁰

But peace and calm, rather than swirling floods, are characteristic of the Turkey River. Few areas in the upper Mississippi Valley can compare in scenery with this picturesque region. Even in ancient times it was a favorite abode of man. Some of the finest prehistoric mounds were discovered in the Turkey Valley between 1881 and 1895 by Theodore H. Lewis and Alfred J. Hill.¹⁰¹ In historic times the Indians continued to hunt and fish and bury the bones of their sacred dead beside the beautiful stream. So bitterly did the Sauks and Foxes vie with the Sioux for possession of the Turkey Valley that the ground often ran red with blood. The Winnebago tribe still remained after Iowa became a State. They were protected by the guns

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of old Fort Atkinson which was built in 1840 ninety miles above the mouth of the Turkey River. But in 1848 the tattered remnants of this once powerful tribe were forced to leave, wending their way reluctantly to the forests of Minnesota. The names of Winneshiek, Waukon-Decorah, Dandy, and Whirling Thunder are particularly associated with the valley of the Turkey.¹⁰²

To this happy hunting ground of the red man came the first pioneers — some of them Utopians, wistfully hoping to find an ideal living place. Nine Germans and a Frenchman arrived in 1847 to establish the communist colony of Communia. Three years later a dozen Scotchmen organized Clydesdale, a coöperative colony near Monona.

Elkader was named in 1845 to honor the heroic Algerian chieftain, Abdul-Kadir, then waging a valiant fight against French imperialism in his native country. No fabulous gold mines account for Eldorado, midway between Clermont and Fort Atkinson on the winding Turkey. The name was suggested by the natural beauty of the place at the junction of the Turkey with the Little Turkey.¹⁰³

There were doers as well as dreamers in the valley of the Turkey. On the banks of the Volga at Fayette stands Upper Iowa University, a fitting monument to those pioneers who founded the school as Fayette Seminary in 1857. In that same year William Larrabee came to Clermont to operate a mill on the Turkey River. There he prospered, participated in many civic enterprises, and cultivated the political ideals which made him one of Iowa's greatest Governors.¹⁰⁴

The Turkey River

On the banks of the Turkey near Festina stands St. Anthony's Chapel, built in 1885 by John Gartner and some associates. Measuring only twelve by sixteen feet, this "Little Cathedral" contains four pews accommodating only eight persons. Frequently called the "Smallest Church in the World", St. Anthony's Chapel is a monument to the religious faith of John Gartner who lies buried in the church cemetery.¹⁰⁵

Amid such surroundings, art is certain to flourish. Though no painter has yet succeeded in portraying adequately the beauties of the scenic Turkey River, the valley itself has been an inspiration to a number of artists. On their farm near Spillville the Bily brothers have carved from native timber huge wooden clocks, some of them more than nine feet high, and all equipped with delicate musical mechanisms. Natives of Bohemia and masters of their craft, the Bily brothers have been called "poets in wood" by one enthusiastic visitor. Another skilled craftsman, Gust Pufahl, has fashioned a remarkable collection of wood carvings at his home near Monona.¹⁰⁶

To this peaceful valley fled Antonin Dvorak in 1893 from the rush and noise of New York City, to find a haven of rest in the quiet Bohemian village of Spillville on the banks of the Turkey River. There he is said to have found inspiration for many melodies. In particular he worked on some of his greatest compositions — "String Quartette in F Major" and the last movement in his "New World Symphony". A monument to his memory stands on the bank of the dreamy stream. The Turkey River deserves universal gratitude if only for the inspiration it gave Dvorak.¹⁰⁷

THE LITTLE MAQUOKETA RIVER

MANY moons ago the burly black bear roamed the woods along the streams of Iowa. To the Indian this powerful animal was a great benefactor: its flesh was good to eat; its skin served as a warm winter garment or as a couch in the wickiup; its teeth and claws made coveted ornaments. So highly did the red man regard the bear that a gens in almost every tribe bore its name. Among the Ioways the bear and the buffalo gentes were paramount: the chief of the bear gens acted as tribal leader in the fall and winter while the buffalo chief led the tribe in the spring and summer. The name of the mighty Fox chief, Poweshiek, has been translated to mean the "Roused Bear" or the "Shedding Bear". Smutty Bear, a Yankton Sioux chief, was prominent in the pioneer days of Sioux City.¹⁰⁸

When Lieutenant Albert M. Lea explored the interior of Iowa in 1835 he found the larger game was disappearing but asserted that bear and buffalo were still "within reach" of the hunter. Five years later Jesse Williams declared that black bears were numerous in the rocky gorges bordering the Maquoketa and Turkey rivers but did not trouble the settlers. Although bears were seldom seen by the pioneers, Dr. Isaac Galland reported that the Indians frequently captured old bruin during his winter hibernation.¹⁰⁹

Since it was common practice for both Indians and white men to name streams for the wild game found along

The Little Maquoketa River

their banks, it is not strange that the bear should have been recognized in this fashion. There are eighteen Bear creeks and four Little Bear creeks in Iowa. In addition to this, two rivers — the Maquoketa and the Little Maquoketa — were so-named by the Indians because of the numerous bears found in their valleys.¹¹⁰

The Little Maquoketa River was just as well known as the Great Maquoketa River to the early travelers and explorers. Lieutenant Zebulon M. Pike recorded the "Great Macoketh" in his journal and placed the "little river of the same name" about "20 leagues" higher up the Mississippi. "These two rivers appear to approach each other," Pike observed, "and have nothing remarkable excepting lead mines, which are said to be in their banks." In 1823 Beltrami passed the "Prairie Macotche" sixteen miles above Dubuque. The Little Maquoketa, he was told, had received its name from a "savage" who dwelt in the vicinity.¹¹¹

The earliest maps known to identify the Little Maquoketa by name date back to the era of the Louisiana Purchase. William Clark's map of 1810 referred to "Bear Creek" while Arrowsmith's map of 1814 showed "Bear River" flowing into the Mississippi between Catfish Creek and the Turkey River. Subsequent maps endeavored to popularize the Indian word for bear. Thus Lea's map of 1836 showed the "Little Mequoquetois" with the town of Peru located near its mouth. J. H. Colton's map of 1839 placed Peru and Durango on the "Lit. Makoqueta R." with a dozen lead mines dotted along its banks.¹¹²

The Little Maquoketa River rises at an altitude of 1150 feet above sea level and flows for eighteen miles through

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northern Dubuque County, entering the Mississippi at an altitude of 590 feet. Its slope per mile is almost four times as great as the Turkey River and over five times as rapid as the big Maquoketa. Although it is barely twenty miles in length the Little Maquoketa drains an area of 146 square miles, a fact largely due to its numerous, tenuous tributaries. The valley of this picturesque stream has a maximum width of twelve miles.

From the crest of the Niagara escarpment at Centralia (which serves as a divide between the valley of the Little Maquoketa and Catfish Creek) the traveler can see what has been called "the grandest prospect" of the region. Looking eastward one may view an "embossed map" of gently sloping divides and round-topped hills whose margins are marked by lines of cliffs, divided by the zig-zag gorges of the Little Maquoketa and Catfish Creek. On clear days the observer can descry such landmarks as Table Mound, Scales Mound, Sinsinawa Mound, and Platte Mound lying at distances of from fifteen to forty miles away.

The Little Maquoketa rises among these rock-bound rounded hills and flows through a narrow V-shaped gorge of gradually increasing depth and ruggedness. Half way to its mouth the canyon walls of the Little Maquoketa withdraw, the valley becomes U-shaped, then flat-bottomed, and finally, near Dubuque, the channel dips sharply into an inner gorge of Galena limestone.¹¹⁸

Like the valley of the Yellow River, the Little Maquoketa proved to be a valley of blasted hopes for many Iowa pioneers. The small stream gave promise of future

The Little Maquoketa River

greatness even before the permanent settlement of the Black Hawk Purchase began in 1833. When Major Thomas Forsyth ascended the Mississippi in 1819, his interpreter, G. Lucie, a former employee of Julien Dubuque, located seven lead mines on the Mississippi between Apple Creek and Prairie du Chien. The sixth mine, according to Forsyth, was situated on "Little Macouttely Creek" some fifteen miles above Julien Dubuque's mines on the west side of the Mississippi and six miles up the Little Maquoketa on the right bank and at the water's edge. During high water, Forsyth said, boats could go nearly half way to the mine from the mouth of the creek.¹¹⁴ In his journal of 1820 Henry Schoolcraft also noted this "*Mine of Maquan-quitons*" situated "a short distance up the little Maquan-quiton's river, which flows into the Mississippi fifteen miles above Dubuque's mines. It has been the least explored of any."¹¹⁵

Fifteen years later Lieutenant Albert M. Lea described the "Little Mequoquetois" as a favorite site for the "enterprising people" who have settled west of the Mississippi. "Its stream", the young dragoon officer wrote, "is clear and rapid, affording several good sites for machinery, throughout the greater part of its course. It affords a depth of fifteen feet for two and a half miles above the mouth, and is wide enough to admit that far the largest boats that navigate the Upper Mississippi. The fertile lands on its borders are said to be extensive; and it affords large forests, also, composed chiefly of oak, walnut, ash, and cherry."

Lea was delighted with the prospects of the town of

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Peru, beautifully situated on the south bank of the "Little Mequoquetois". This mushroom village was so named because of the "richness of the mines" with which it was surrounded. According to Lea: "It has beauty of situation, richness of surrounding soil, great mineral wealth in its vicinity, convenience of wood, stone and lumber, and every thing that could be desired for a town in this climate, except that it is not exactly on the Mississippi. Nevertheless, Peru must be a place of much trade in the products of the contiguous mines." ¹¹⁶

In the first few years of settlement in the Black Hawk Purchase, Peru proved to be a formidable rival of Dubuque. At Peru lived such men as Thomas McKnight, Augustus L. Gregoire, Thomas Carroll, and Francis Gehon, the latter destined to become chairman of the Iowa Constitutional Convention of 1846. Another founder, Michael W. Powers, became the town's first postmaster on December 7, 1836. But leaders alone, even though men of means, could not build a city. Peru needed a more navigable waterway at its door on which to carry agricultural and mineral resources to the outside world, and so its rival, Dubuque, on the Mississippi soon gained supremacy. In 1880 a Dubuquer remarked that the land on which Peru once stood was known "for the superiority of its strawberries, early cucumbers and green corn."

Two other towns, Sageville and Durango, sought to emulate swiftly-growing Dubuque. Sageville was laid out by Chester Sage and Brayton B. Bushee two miles up the Little Maquoketa from Peru and only five miles north of Dubuque. Sage and Bushee built a sawmill there in 1834 —

The Little Maquoketa River

said to be the first sawmill in Dubuque County and the second in Iowa. A year later burrs for grinding grain were installed and a village began to form. Eventually a stone mill was built which still stands as a monument to the faith and ambition of the founders of Sageville.

Three miles farther up the Little Maquoketa River stood Durango, founded by Thomas McCraney, Presley Samuels, Nehemiah Dudley, Richard Marston, and John R. Ewing. Presley Samuels became the first postmaster of Durango in 1850. It was a common remark in these early days that the "best men" in Dubuque County could be found at Pin Oak and at Timber Diggings, the original name of Durango. Now less than a hundred citizens can be counted within the limits of the town.¹¹⁷

The Little Maquoketa Valley may well be remembered for its historic past, for it was the "little river Maquankitois" that formed the northern limits of Julien Dubuque's fabulous "Mines of Spain". But the valley of the Little Maquoketa is better known for its scenes of rare beauty. Nowhere else in Iowa are there so many readily accessible rustic drives. High, castellated hills, sharp-cut pinnacles, and fantastic minarets form an ever-changing panorama.¹¹⁸ Photographs taken along the Little Maquoketa find their way into Iowa geography books. The roads through Sageville, Durango, Peru Bottoms, Lore, Twin Springs, Five Points, Bankston, Cottage Hill, Rickardsville, and Sherrill's Mound offer the geologist, the archaeologist, and the casual nature lover days of contentment and deep joy.

CATFISH CREEK

A LIGHT canoe skimmed swiftly down the Mississippi from Prairie du Chien. In it sat a lone French Canadian, skillfully plying his paddle. Under his steady, powerful stroke, the feathery craft darted past the Turkey and Little Maquoketa rivers and entered the mouth of Catfish Creek. There stood the Fox Indian village of Kettle Chief with smoke curling lazily upward from the many lodges which had stood at the mouth of Catfish Creek since 1780, when the British had influenced the Foxes to guard the mines and prevent either the Spanish or the Americans from working them.

The Revolutionary War had ended in 1783 but the Fox Indians had steadfastly refused to permit any white men to work the mines. They did not, however, feel unfriendly toward this gay young Frenchman who beached his canoe and entered Kettle Chief's lodge with many gifts. The Foxes called him Little Night in their own language because of his short stature and swarthy complexion. His real name was Julien Dubuque.

Born in Canada in 1762, Julien Dubuque settled in Prairie du Chien soon after his father's death in 1783. There he became acquainted with Kettle Chief's band. Spurred by the possibility of wealth hidden in the hills about their village, Dubuque lavished presents upon the Indians. Legend also associates his frequent visits to the village with a pretty

Catfish Creek

Indian maiden, Potosa, shy but evidently responsive to the young man's wooing for, it is said, she finally became his wife. Little Night himself was adopted by the tribe. On September 22, 1788, the Foxes granted Julien Dubuque the right "to work at the mine as long as he shall please". A few days later Dubuque secured permission to erect markers or monuments at the confluence of the Little Maquoketa and the Tête de Mort with the Mississippi. Thus in the year before George Washington became President, the first permanent settlement in Iowa was made on the banks of Catfish Creek.

In 1796 the first Spanish land grant was made in what is now Iowa when Governor-General Carondelet granted Dubuque's humble petition for the confirmation of his title to the land. About the time of the Louisiana Purchase, Dubuque sold seven undivided sixteenths of all his Mines of Spain to Auguste Chouteau, a wealthy St. Louis merchant, but he wisely retained possession of rich holdings on both banks of the Catfish. For twenty-two years, or until his death in 1810, Julien Dubuque ruled over this princely tract extending for twenty-one miles along the Mississippi and approximately nine miles inland.

When the Fox Indians learned of Dubuque's death they were thunderstruck. Tribesmen came from miles around to attend his funeral, while chiefs and warriors vied with each other for the honor of carrying his remains to the grave. Tradition has pictured a sorrowful procession filing up to the top of the high bluff on the north bank of Catfish Creek overlooking the Mississippi. After a number of brilliant funeral orations the Indians chanted the death

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song of a brave and returned mournfully to their village. Soon afterward Dubuque's faithful French Canadians placed a cedar cross over his grave. On it they inscribed in French: "Julien Du Buque, Mineur de la mine D'Espagne, morait le 24 Mars, 1810 — age de 45½ annees." ¹¹⁹

The rich lead mines around Catfish Creek were known to white men long before the advent of Julien Dubuque. Nicolas Perrot established his trading post among the Miami Indians in 1690 opposite some rich lead mines in that vicinity. In 1700 Pierre Charles Le Sueur passed two small rivers above the Rivière a la Mine (Fever or Galena River) and made "examination of a lead-mine, from which he took a supply." Le Sueur's journalist, Penicaut, recorded Perrot's lead mines on both sides of the river.

Three years later, in 1703, William Delisle's map of New France noted the location of the same mines. Moreover, his map of 1718 showed a "mine de plomb" located just below a stream which apparently represented Catfish Creek. It was not until after the Louisiana Purchase, however, that map makers began to designate the stream as Catfish River or Catfish Creek. Pike's map of 1810 properly located "Mr. Dubuques House" on the south bank of Catfish Creek at its junction with the Mississippi. While Pike failed to name the creek, Clark labeled it "Catfish R." on his map of 1810 and showed lead mines on both banks. Arrowsmith also named and located "Catfish R." on his map of 1814. In 1836 Lieutenant Albert M. Lea asserted that Catfish Creek took its name "from the quantities of catfish that are found in the sluggish water at the mouth of the creek." ¹²⁰

Catfish Creek

A number of notable travelers left accounts of their visits to Catfish Creek. When Lieutenant Zebulon M. Pike arrived at the lead mines of "Monsieur Dubuque" on September 1, 1805, he was "saluted with a field-piece, and received with every mark of attention". In 1820 Indian Agent Henry R. Schoolcraft visited the Fox village and lead mines on Catfish Creek. According to Schoolcraft: "The Kettle chief's village is situated on the west bank of the river, and consists of nineteen lodges, built in two rows — pretty compact — with a population of two hundred and fifty souls." By means of a generous bribe of "whiskey and tobacco", Schoolcraft was allowed to visit the mines. He found the "principal mines" located upon a "tract of one square league, commencing immediately at the Fox village of the Kettle chief, and extending westward. This is the seat of the mining operations formerly carried on by Dubuque, and of what are called the *Indian diggings*." Beltrami was also "obliged to have recourse to the all-powerful whiskey" to obtain permission to visit these mines in 1823.¹²¹

Permanent settlement of Iowa began on June 1, 1833, and Catfish Creek was the site of some of the first squatter communities in the Black Hawk Purchase. After expressing delight with the fine woods, rich lands, good water power, and numerous crystal springs that made the Catfish Creek area such a fine place to settle, Albert M. Lea called attention to the flourishing village of Catfish. "This is a little place laid out in 1832, on a piece of flat ground, containing about fifteen acres, and hemmed in on all sides by a precipitous rocky bluff, the Mississippi, and the creek of

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the same name. It possesses great advantages in the richness of the contiguous mines, has a good landing, a mill near at hand, and is withal a very busy little place.”¹²²

George Catlin, the famous American painter of Indians, considered “*Dubuque’s Grave*” at the mouth of Catfish Creek a place of “great notoriety” on the Mississippi. In his painting of the site Catlin included Catfish Creek, together with “an extensive smelting furnace” at the foot of the bluff “where vast quantities of lead are melted from the ores which are dug out of the hills in all directions about it.”¹²³

There was ample reason why Catfish Creek enjoyed such unusual notoriety. There, in 1780, the British and their Indian allies attacked and captured the Spanish and American lead miners in the only skirmish of the Revolutionary War on Iowa soil. There, on July 4, 1828, a party of excursionists from Galena first celebrated the Fourth of July in the Iowa country. On this occasion the American flag was raised opposite the “tepee” of an Indian maiden in the “aristocratic quarter” of the Fox village. This is said to have been the first time the Stars and Stripes was flown by private citizens in what is now Iowa. There Patrick O’Connor murdered his partner George O’Keaf—an episode which resulted in the first trial and execution in Iowa. On the banks of the Catfish was established the first blast furnace in Iowa and beside this picturesque stream pioneers erected one of the earliest mills in the Black Hawk Purchase. The little valley is, indeed, a veritable cradle of historic beginnings in Iowa.¹²⁴

According to a local tradition, Julien Dubuque once

Catfish Creek

quarreled with the Indians over some question of privilege. Incensed at their stubborn refusal, Dubuque threatened to set Catfish Creek on fire. Still the Foxes remained obdurate. That evening under cover of darkness two of Dubuque's white companions carried a dark object up Catfish Creek. Just above the bend that hid their actions from the village they halted and poured the contents of the barrel into the water. Dubuque again called the Indians into council and repeated his demand. Still the Foxes sullenly refused. For a moment Little Night and his red brothers glared defiantly at each other. Then the Frenchman stooped, snatched a fire-brand from the fire, and hurled it into the creek. In a twinkling the water burst into flames as the burning firebrand ignited the oil on the surface. Terrified at Little Night's demonstration that he could burn their villages and even the Mississippi, the Indians capitulated.¹²⁵

The basin of Catfish Creek is not impressive, for the twelve-mile-long stream with its two principal tributaries drains only seventy square miles in southeastern Dubuque County. The main stream rises among the rolling hills that cloister the Trappist Abbey of New Melleray and flows in a northeasterly direction until it discharges into the Mississippi River two miles south of Dubuque. The South Fork of Catfish rises in the highlands about Centralia and flows eastward to join the main stream from the north about two miles above its mouth and just west of the little village of Rockdale. The North Fork of Catfish Creek rises in the rugged terrain around Twin Springs and Lore, and flows eight miles in a southeasterly direction to its con-

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fluence with the main stream just below the South Fork and on the same side. The convergence of these tributaries just above Rockdale presaged disaster to that secluded little community.¹²⁶

On July 4, 1876, Rockdale observed the centennial birthday of the United States with noisy mirth. By ten o'clock that night most of the inhabitants had gone to bed; only a few loitered in the local saloon. The evening was sultry, dark clouds blacked out moon and stars, and presently large rain drops came pelting down. By midnight the steady downpour had swollen the converging waters of Catfish Creek into a raging flood. A contemporary account gave this description: "Wave after wave of water, many feet high, came in succession, as with the weight of molten iron and the erectness of a wall, and house after house went whirling and spinning, and tumbling and crashing, on the mad avalanches of water which tossed them like things of air, onward and downward." In the short space of half an hour all but the mill and one dwelling were swept away "like so many cockle shells". The torrent which swallowed the village was fully twenty feet deep and two thousand feet wide. In this swirling deluge the shrieks of men, women, and children were drowned amidst the roaring of the water, the crashing of the buildings, and the reverberations of thunder.

Day dawned upon the most awful scene in the annals of Iowa floods. The normally peaceful Catfish had taken thirty-nine lives, virtually depopulating little Rockdale. For a mile along the creek, which had already subsided, bodies were recovered, many of them crushed and mangled

Catfish Creek

almost beyond recognition. They were found in the ruins of houses, in the water, and in the mud and brush along the bank. Often only an arm, a foot, or a bit of clothing was exposed in the mud and debris. No other Iowa river has taken such a heavy toll of human life!¹²⁷

Illinois Central trains now thunder out of Dubuque over an old bed carved through the limestone rocks by the winding Catfish in geologic times and swerve westward around the bluff on which Julien Dubuque's monument stands sentinel-like. Passengers aboard the train may well recall the names of Nicolas Perrot and Jean Marie Cardinal, of the Kettle Chief and the Fox village, of Julien Dubuque and his fabulous Mines of Spain. A moment later the train roars under the modern viaduct that spans the Catfish — a fitting memorial to the pioneers who lost their lives there on the Fourth of July, 1876.

TÊTE DE MORT CREEK

HENRY Lewis came from England to St. Louis in 1836 to work as a humble stage carpenter in the Ben de Bar Opera House. In this atmosphere of actors, playwrights, and artists, Lewis suddenly discovered he possessed ability as a painter. Wishing to utilize his talent, he conceived the idea of painting an enormous panorama — at that time a popular kind of enterprise. He proposed to picture the Father of Waters from the Falls of St. Anthony to the Gulf of Mexico.

Between 1846 and 1849 Lewis worked diligently on this Herculean task. During the summer months he floated gently down the Mississippi in a houseboat sketching scenes of interest. During the winters he painted industriously at every opportunity. When the panorama was finally completed it measured 1325 yards in length and stood twelve feet high. This amazing exhibit was viewed by thousands, including President Zachary Taylor, and won loud acclaim along the eastern seaboard. Lewis then shipped his panorama across the Atlantic, exhibiting it both in England and on the continent.

Settling in Düsseldorf in 1851, Lewis determined to study art. His panorama was reproduced in a series of twenty pamphlets entitled *Das Illustrierte Mississippithal*. Each part contained four beautifully lithographed pictures and all were combined in 1857 into a book with the same

Tête de Mort Creek

title by Arnz & Company.¹²⁸ *Das Illustrierte Mississippthal* included seventy-eight lithograph plates, approximately one-third of which dealt with the upper Mississippi along the eastern border of Iowa. The defeat of Black Hawk at Bad Axe, Fort Crawford at Prairie du Chien, the mouth of the Wisconsin, Cassville, Dubuque, Tête de Mort, Galena, Bellevue, Savannah, Port Byron, the Rock Island Rapids, Fort Armstrong and Davenport, Muscatine, Burlington, Fort Madison, Nauvoo and the Mormon Temple — these were among the scenes that captured the attention of the enthusiastic Lewis. Only one Iowa river, the Tête de Mort, was included in this grandly conceived portfolio of paintings.

Tête de Mort! Death's Head! What tragedy could have occurred along this tiny stream that should have caught the artistry and imagination of Henry Lewis? Let him explain: "The Death's Head River, a small but beautiful stream, rises in Jackson County and empties into the Mississippi twelve miles below Dubuque on the right bank. At its mouth rises a cliff about one hundred and fifty feet high. At this place an event occurred to which the cliff as well as the river owes its name. Many years ago, the Sac and Fox Indians waged war with the Dakotahs. A number of the latter had undertaken an expedition into the enemy country and had encamped themselves at the foot of the cliff. But they were discovered by the Sacs and suddenly attacked; at the break of day they attempted to make a retreat, but they were cut off by a still greater number of the enemy, and no course was left open to them except to swim across the river or to climb up to the top of the cliff

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and there to defend themselves as best they could. They chose the latter, but when the sun rose, they found themselves completely surrounded, for the enemy numbered no less than four hundred warriors. Now they saw that there was no escape, and they decided to sell their lives as dearly as possible, for they knew very well that if they surrendered they could only expect death from the cruelest tortures. They accordingly formed themselves into line of battle and began to sing their death song. As the enemy began to move up from all sides they sprang to the attack and all of them fell in the battle. Not one remained to bring the sad news to their friends. Their bodies were scalped and thrown over the cliff. When the French colonists came upon them many years later they found the skulls and bones of the slain lying at the bottom of the cliff and gave it the name *Tête de Mort*. They likewise called the river *Tête de Mort*.”¹²⁹

According to W J McGee, Death's Head Creek, like most waterways in northeastern Iowa, belongs to the “widely branching dendritic type” of streams. Although only twelve miles long, the river has a valley six miles broad at its maximum width. Its basin is thirty-seven square miles in extent — one of the most beautiful valleys in northeastern Iowa.¹³⁰

The *Tête de Mort* is interesting historically because it served as the southern boundary of Julien Dubuque's Spanish land grant. In his petition to Governor-General Carondelet in 1796 the cunning Dubuque referred to this river as the *Mesquabysnonques*, or the Red Humming Bird, as some translate it. This appears to be the first time the

Tête de Mort Creek

stream was specifically designated. Zebulon Pike does not mention the Tête de Mort by name but Thomas Forsyth made the following reference to it in his journal of 1819: "Saw two Indians hunting turtle eggs on a small sandy island. The wind began to blow hard. Made out to get to Death's-Head Creek, where we waited three or four hours until the wind abated. . . . While laying at Death's-Head Creek, a Fox Indian came to my boat, and told me two boats lashed together had passed down the river last night." ¹⁸¹

The Tête de Mort is the only stream between the Wapipinicon and the Turkey rivers identified on the map accompanying the report of Major S. H. Long's expedition of 1823. On this map the twelve-mile stream is represented to be as long as "Wapisipinacon Cr.", a river which is actually 255 miles in length. ¹⁸²

The Italian adventurer Beltrami also heard the legend of an Indian battle. "Higher up," Beltrami wrote, "after passing the rivers *la Pomme* and *la Garde*, which run westward, we saw a place called the Death's-heads; a field of battle where the Foxes defeated the Kikassias, whose heads they fixed upon poles as trophies of their victory." ¹⁸⁸ Clearly, the tragic story of the red men was well known a decade before the permanent settlement of Iowa began.

When Lieutenant Albert M. Lea published his account of the Iowa District in 1836 he expressed enthusiasm over the Tête de Mort River. "Again the good farming land re-appears upon this stream. The timber also is found in sufficient quantities for agricultural purposes; and there is good water power at various places along it. Lead ore is

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abundant on both sides of it, though the mining operations have not yet been extended thus far from Du Buque." These lead deposits were probably those to which Thomas Forsyth referred in 1819. Forsyth was told of a lead mine "at a place called the Red Head's village, about six miles above the Grand Macouttely [Great Maquoketa], on the west side of the Mississippi, up a small creek on its left bank, about sixteen miles from its mouth".¹⁸⁴

Americans and foreigners were not slow to stake out claims in the valley of the Tête de Mort. Louis Efferding, Barney Sanders, David Zigler, and Daniel Brown were among the first to settle in Tête de Mort Township, while Jeremiah Regan and O. Sullivan were pioneers in Prairie Springs Township. The first post office in the valley, established on December 6, 1839, was appropriately named Tête de Mort, with Daniel Brown serving as first postmaster.¹⁸⁵

The pioneers found the fruitful Tête de Mort Valley was particularly attractive to German immigrants. John Joerger came from Baden in 1844, J. H. Felderman from Hanover in 1846, John A. Tritz from Prussia, and Frederick Dietz from Bavaria. The large number of immigrants from the northern German provinces resulted in the establishment of St. John's Evangelical Lutheran Church on a beautiful site one mile south of St. Donatus in 1855. A handsome new edifice stands as a monument to the faith of those German Lutherans.

To this Elysium also came a group of sturdy Luxemburg settlers, including Nicholas Gilles, Nicholas Kas, John Kraus, Nicholas Krier, and Nicholas Siren, to establish a

Tête de Mort Creek

settlement which they named Tête de Mort in commemoration of the bloody legend associated with the stream. The Luxemburgers, having much of the little valley to themselves, retained their native customs and traditions. In memory of their homeland they virtually re-created their quaint European village life. Father Michel Flammang, who came to labor among them during the 1850's, abhorred the gruesome name of the village. He changed it to St. Donatus, and St. Donatus it remains to this day, a Luxemburg idyll in the heart of America.

On August 30, 1855, a post office was established at St. Donatus with Peter Gehlen as the postmaster. Twenty-six of the forty-eight prominent men listed in the Jackson County history as living in Tête de Mort Township in 1879 received their mail at St. Donatus. Like other rural areas in Iowa, the population of Tête de Mort and Prairie Springs townships is on the decline: in 1900 the two combined counted 1551; by 1940 this number had decreased to 1093.

Visitors to the Tête de Mort Valley are impressed with its scenic loveliness. Although only about fifty inhabitants remain in St. Donatus, the quaint two-story stone houses, designed like French houses without eaves or cellars and yellow with age, still stand as monuments to the founding pioneers. Many of these oblong, porchless houses, with their green-painted shutters, are mouldering away with a rank growth of vegetation about them. But the picturesque Tête de Mort flows on, just as it did when Julien Dubuque designated it as the southern limit of his Mines of Spain.¹⁸⁶

THE MAQUOKETA RIVER

FEW Iowa names have been harder to spell than the Indian word for bear, from which two rivers and a town have derived the name Maquoketa. Perhaps the difficulty of spelling the word caused the early cartographers to use the English equivalent; the Little Maquoketa was labeled Bear Creek by William Clark in 1810. After the permanent settlement of Iowa began, however, map-makers almost invariably attempted to spell the word phonetically according to its Indian sound. On Lea's map of 1836, for example, the Maquoketa River was designated as the "Gr Mequoquetois". Colton referred to it as the Makoqueta in 1839. T. C. Bradford's map of the same period indicates it as the "Great Macoquetois", while on S. A. Mitchell's map of 1846 it is spelled "Macoqueta".¹⁸⁷

Nor were the early geographers alone in the individuality of their spelling. The early settlers had the same difficulty. When the name of the post office at Springfield was changed to Maquoketa, on March 13, 1844, trouble with orthography began at once. Letters received at the Maquoketa post office included the following choice spellings: Makokety, Macoquety, Makokueta, Macoyta, Macoeketa, Makoketa, Macotokey, McKokady, Macoty, and Makozuta. It is doubtful if the name of any other Iowa town has been misspelled more consistently.¹⁸⁸

The Maquoketa River is one of the most beautiful

The Maquoketa River

streams in Iowa. Rising at an elevation of 1160 feet in the southeastern corner of Fayette County, the river flows in a southeasterly direction through a valley continually changing in width in a basin varying from strongly rolling to sharply rugged contours. In 135 miles it falls 580 feet. At Spragueville, thirteen miles above its mouth, the Maquoketa deserts its southeasterly course and swings northeast at a right angle. The main tributary is called the North Fork of the Maquoketa and rises in the rugged area of northwestern Dubuque County in the vicinity of Luxemburg and Holy Cross. Flowing tortuously in a southwesterly direction through New Vienna, Dyersville, and Cascade, the North Fork debouches into the main stream just below the city of Maquoketa.¹³⁹

Scenes of rare beauty are encountered throughout the valley of the Maquoketa. For approximately ten miles below its source, which is near the southern limits of the town of Arlington, the Maquoketa is a "widely meandering stream" of the drift-plain type. Upon entering northwestern Delaware County the river swings in a gigantic ox-bow through picturesque Backbone State Park where rugged limestone bluffs, some of them 140 feet high, stand guard over a region of primeval forests consisting of tall, tapering white pines and hardy elms, oaks, and maples. There, historic Richmond Springs, one of the largest springs in Iowa, nourishes the large trout and bass fish hatchery established by the State. There, too, a large variety of shrubs and flowers delight the nature lover.¹⁴⁰

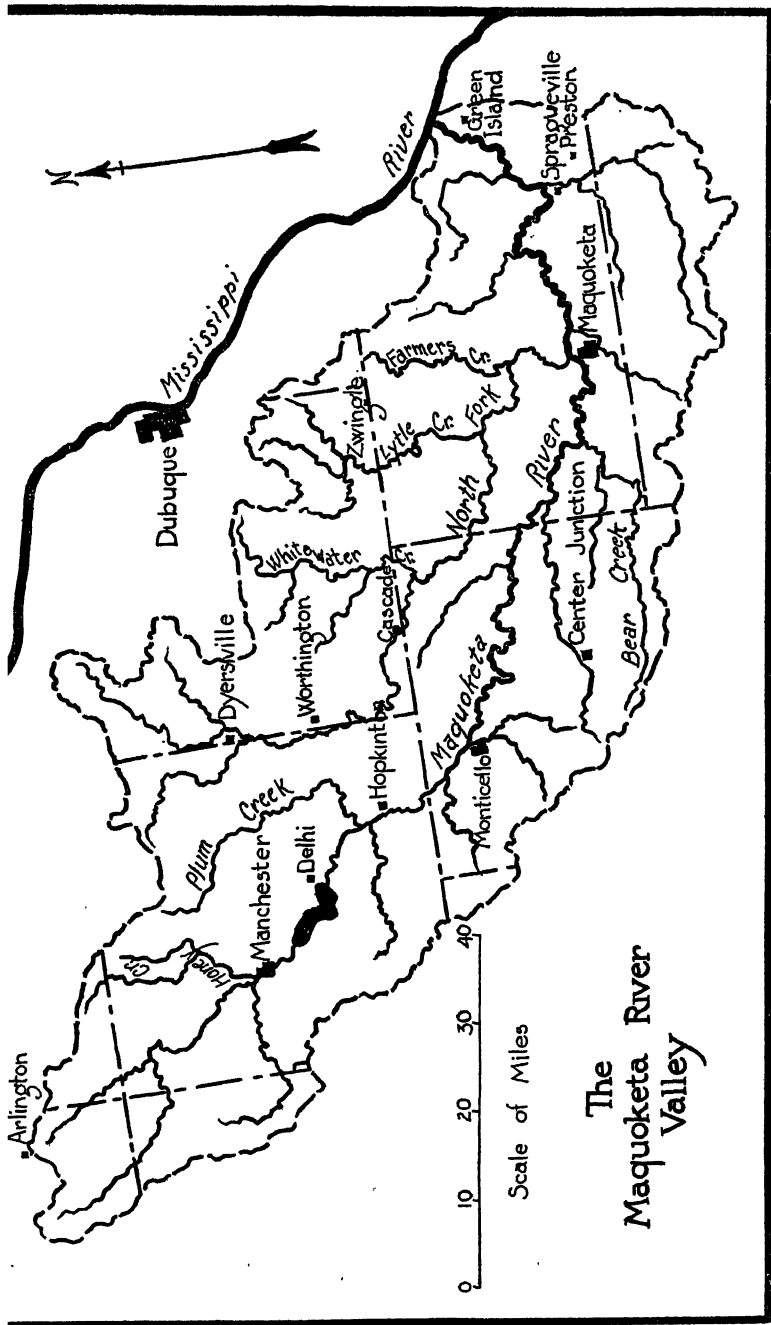
Below Manchester the United States maintains another fish hatchery. A little farther downstream is Silver Lake,

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which has the distinction of being not only the oldest lake in the State but also the only natural lake in northeastern Iowa. The wildcat area south of Hopkinton is yet another scenic region of bluff and woodland where red and grey fox, raccoon, skunk, mink, muskrat, opossum, and various other game animals may still be found. Some of the largest caves in this section of Iowa are located in the Table Rock area.¹⁴¹

Around Monticello the river flows through a comparatively level region, though high bluffs crowned with scrub cedar once more hem the Maquoketa below Monticello. It is near the town of Maquoketa, however, that the river flows through the most picturesque section of its valley — the Maquoketa Caves State Park, where huge limestone caves invite the inspection of thousands of visitors, where Iowa's own beautiful Natural Bridge flings its arch fully fifty feet above the valley floor, where winding trails lead to scenes of natural beauty. Throughout its length the Maquoketa affords Iowans one of their most interesting wonderlands.¹⁴²

But the Maquoketa Valley is characterized by more than scenic beauty. The region is also rich in historical lore. Lying almost entirely within the original Black Hawk Purchase, this basin was the scene of stirring events in pioneer times. Horse thieves, counterfeiters, and desperadoes found the rugged country pock-marked with caves, thus affording ideal hide-outs from which to carry on their work. Gradually, however, the law-abiding pioneers ferreted these criminals from their holes and established order in Jackson County.



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That the Maquoketa Valley attracted able inhabitants is evidenced by the fact that the first Governor of the State came from this region. A monument in honor of Ansel Briggs was erected in the cemetery at Andrew by the State of Iowa. From Andrew, too, came Robert M. Losey who was killed in Norway in 1940 while serving as a military observer for the United States. Delhi was once the home of J. L. McCreery, author of the poem, "There is No Death". Cascade takes great pride in Urban ("Red") Faber, a native son who gained distinction as a pitcher for the Chicago White Sox. During the 1920's Ruth Suckow maintained an apiary at Earlville and derived many of her characters from the rural environment of Delaware County.¹⁴³

Despite the rolling topography of the Maquoketa Valley the soil is very rich. Albert M. Lea declared it would be difficult to find "inferior soil" in the "Great Mequoquetois" Valley. In 1838 a Jackson County farmer raised a cucumber measuring eighteen inches in length and sixteen inches in circumference. This remarkable vegetable, which weighed over five pounds, was the subject of editorial comment in the Dubuque *Iowa News*. In 1865 William Wilson declared the Jackson County region was "unsurpassed for fertility" and praised the success of farmers in raising fruit of all kinds. At that time improved land in Delaware County was held at fifteen to thirty dollars an acre while unimproved land brought five to ten dollars an acre. Farm hands were paid from twenty to thirty dollars a month while mechanics received as high as four dollars a day.¹⁴⁴

Grain is still raised in abundance in the Maquoketa Val-

The Maquoketa River

ley, with corn and oats as the principal crops. There is also considerable livestock farming. The beginnings of dairying in the valley may be traced to pioneer days. In 1872 John Stewart started his Spring Branch Creamery a few miles east of Manchester. This is said to have been the first butter creamery in Iowa. Stewart brought fame and fortune to Iowa in 1876 when his butter won the gold medal at the International Centennial Exposition at Philadelphia. About this time (1877) A. B. Holbert located his Belgian Horse Farm at Greeley. This famous farm has won many high awards at the International Livestock Exposition at Chicago and at the National Belgian Horse Show at Waterloo.¹⁴⁵

The pioneers of Jackson County who lived on the banks of the Maquoketa were intrigued by the possibility of navigating the stream. In 1837 the Dubuque *Iowa News* asserted that the town of Richmond, situated three miles above the mouth of the Maquoketa, was accessible for steamboats at almost any stage of water and was "destined to rank with the first in the far-famed West" as a "depot for the upper trade of the Maquoketa country". In October, 1843, a keelboat ascended the Maquoketa to the North Fork and was freighted with a cargo of wheat.¹⁴⁶

Keelboat transportation, however, was not satisfactory. Steamboats were needed. In 1859 steamboat traffic was inaugurated. "The people of Maquoketa and vicinity", announced the *Des Moines Valley Whig* of April 25, 1859, "have organized a company for the purpose of securing the navigation of the Maquoketa River to that point. If the present season is to be a counterpart of the last, as the

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experience of the past few weeks has indicated that it might be, the prairies of Iowa could be much more easily navigated by steamboats, in any direction, than traversed by railroads." But in 1860 the steamboat *Maquoketa City* got firmly stuck on a sandbar near Bridgeport on the Maquoketa. "This", the Bellevue *Courier* declared, "looks bad for her success in navigating that stream."¹⁴⁷

Undaunted by such reports, the citizens along the Maquoketa continued their efforts to navigate the shallow, winding stream. "Last week", boasted the *Maquoketa Excelsior* of May 10, 1862, "the steamer 'Echo' arrived at Maquoketa. The 'Enterprise' arrived on Sunday. This shows that the Maquoketa river can be navigated, and from this time on no doubts need be entertained of the practicability of the undertaking. The people of the neighboring towns have had their laugh out, and we are now reaping the benefits of a home market and a lavish trade. P. S. We note that both steamers left this morning heavily loaded."¹⁴⁸

The year 1864 was a notable one in boat building on the Maquoketa River. The *Alice Wild* of 11.57 tons, the *Viola* of 39.32 tons, and the *Sterling* of 63.07 tons were all built at Maquoketa that year by Frank Barnes. The *Sterling* proved to be too large a boat for the Maquoketa River and was withdrawn from the trade.¹⁴⁹ Steamboat traffic on the Maquoketa during Civil War days prevented the construction of bridges across the main stream below the North Fork because that section had been declared navigable by Congress. After the Civil War an effort was made to have the Maquoketa River declared unnavigable in order to per-

The Maquoketa River

mit spanning the stream without the expense of erecting drawbridges. Congress granted the State of Iowa such authority on July 13, 1868, and the Thirteenth General Assembly accordingly passed an act in 1870 authorizing the building of bridges across the Maquoketa River in Jackson County. Meanwhile, this legalizing action had apparently been anticipated because as early as 1865 two bridges had been constructed. During the next twelve years a dozen more bridges were erected across the main channel of the Maquoketa River. Navigation of the stream was never very successful.¹⁵⁰

Because of its relatively broad basin the Maquoketa River has experienced numerous floods, even though the normal annual precipitation is only slightly greater than the average for the entire State. In 1851, for example, the year of great floods on all the rivers of Iowa, the Maquoketa was converted into a wild torrent. "A large flouring mill, saw mill, and carding mill, situated on the Maquoketa, are reported as swept away," the *Iowa Democratic Enquirer* recorded. "In addition to the damage done to buildings, mills, warehouses, etc., much damage is also done to farms by the lodgement of drift. In almost every valley the soil has been more or less swept from its bed, and on hillsides the ploughed fields have been badly washed. It is almost impossible to form even an approximate estimate of the damage done in various ways to the property of this county." A man and wife who lived on the banks of the Maquoketa were drowned.¹⁵¹

Perhaps the worst flood in the Maquoketa Valley occurred on June 15, 1925, following a night of torrential

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rain near the headwaters. This flood was caused by one of a series of four heavy rainstorms in northeastern Iowa between June 11th and June 24th. The resulting catastrophe took a toll of ten human lives, drowned livestock, destroyed crops, swept away highways, railroad tracks and bridges, and severely damaged town property. "The Maquoketa river flood was the most damaging", reported the *Dubuque Telegraph-Herald*. "About one third of Manchester, the west side of Dyersville, the west side of Cascade, together with thousands of acres of farm land, were inundated". The flood was generally considered the "most disastrous in the history of the communities devastated", for the water rose several feet higher than in 1896.

At Manchester the great flood of 1925 caused damage totaling \$200,000. One lumber yard was completely wiped out, two 10,000 gallon oil tanks were floated into the river, homes were swept away, and business stocks were heavily damaged. Below Manchester the Maquoketa caused its greatest havoc with livestock, farm crops, and bridges. The North Fork was unable to hold the great volume of water that went swirling and eddying through its channel. A hundred residences in Dyersville were inundated. Rising one and one-half feet higher than in 1896, the water caused damage of \$100,000 in Dyersville alone. Ten miles downstream the North Fork went "ripping and roaring" into its old channel on the north side of Cascade, tearing homes from their foundations and shattering them into splinters. Two lives were lost, fourteen buildings were "totally demolished", and about seventy houses, barns, and business buildings were damaged. Farmers in the flooded area listed

The Maquoketa River

large numbers of cattle and swine as well as barns among their losses. The flood of 1925 was described as the "greatest tragedy" in the history of Cascade, destroying property valued at \$150,000. Damage to railroads, roads, and bridges, combined with the losses of livestock and crops, totaled \$1,888,000 for the Maquoketa and contiguous streams.¹⁵²

The Maquoketa Valley contains a population of 54,874, or twenty-nine people per square mile. Approximately 40 per cent of the inhabitants live in small incorporated towns. There are five municipalities with over one thousand inhabitants. On the main branch of the Maquoketa is Manchester with 3762 residents, Monticello with 2546, and Maquoketa with 4076 in 1940. Dyersville, on the North Fork of the Maquoketa, contained 2046 inhabitants while Cascade counted 1221 in 1930. Although the Maquoketa itself is not navigable, transportation facilities are adequate. A network of 304 miles of railroad serves the people living in the valley.¹⁵³

Rich soil and a homogeneous population contribute to prosperity and happiness in the picturesque valley of the Maquoketa. Well-tilled fields yield a generous livelihood and the rugged natural scenery provides recreation facilities. Three State parks are located in the Maquoketa Valley, whither many Iowans hasten to enjoy the friendly rural scenes, and to fish for trout.

THE WAPSIPINICON RIVER

A FAVORITE hunting ground of the red man was the lovely Wapsipinicon Valley, where herds of deer and buffalo once roamed. According to Indian legend a beautiful Indian maiden named Wapsi once dwelt on the banks of this river near present-day Quasqueton. In a neighboring village lived Pinicon, son of an Indian chief and the ardent lover of the gentle Wapsi. On the eve of their wedding day the two lovers were canoeing near Wapsi's village when the jealous Fleet Foot, a former suitor of the Indian girl, drove an arrow into Pinicon's heart. As Wapsi sprang to the aid of Pinicon the canoe overturned and the two lovers sank beneath the water of the swiftly flowing river. In commemoration of this tragic event the sorrowing Indians combined the names of the two lovers and called the stream Wapsipinicon. Well might an Iowa poet sing:¹⁵⁴

River of such tragic happenings,
River of such noble passions,
Named of each ill fated lover,
Sing their death song, sweet and haunting,
Sing it through the countless eons,
Sing it days and years and ages,
Sing it while the sands are sifting,
Sing that name of wondrous meaning,
The enchanted Wapsipinicon.

The romantic legend of Wapsi and Pinicon deserves to

The Wapsipinicon River

be known and remembered by Iowans. It should be pointed out, however, that various other explanations have been given concerning the origin of this beautiful Indian name. The word has been translated to mean "White Potato River" or "Swan Apple River", because of the white artichokes that grew along its banks.¹⁵⁵

Indeed this explanation of the origin of the name is better founded historically than the Indian legend. As early as 1733 the French referred to the Fox village on the "River Wapsipinikam" which was located "two or three days journey below the Oüisconsin". In the record of his expedition against the Sauk and Fox Indians in 1734, Captain Nicolas Joseph de Noyelles referred to the Wapsipinicon as the "Pomme de Cigne", or "swan-apple" river, so called from a species of root that grew plentifully along its banks. On October 12, 1739, Charles Beauharnois, Governor of Canada, mentioned a conference between the Sioux Indians and Sieur Pierre Paul Marin "at the River of the Swan on the Mississippi".¹⁵⁶

The variations in the orthography of Wapsipinicon are as fantastic as those of Maquoketa. The word is spelled Wabisapenican on Pike's map of 1810, Wabisapincun on Clark's map of 1810 and Arrowsmith's map of 1814, Wapisipinacon on Long's map of 1823, Wapsipinecon on Colton's map of 1839, and Wapesepineka on Galland's map of 1840. Albert M. Lea spelled the word Wabesapinica while J. N. Nicollet referred to it as the Wabezipinka. J. Calvin Smith's map of 1843 was among the earliest to use the spelling Wapsipinicon. Most writers and cartographers had adopted the latter spelling by 1850.¹⁵⁷

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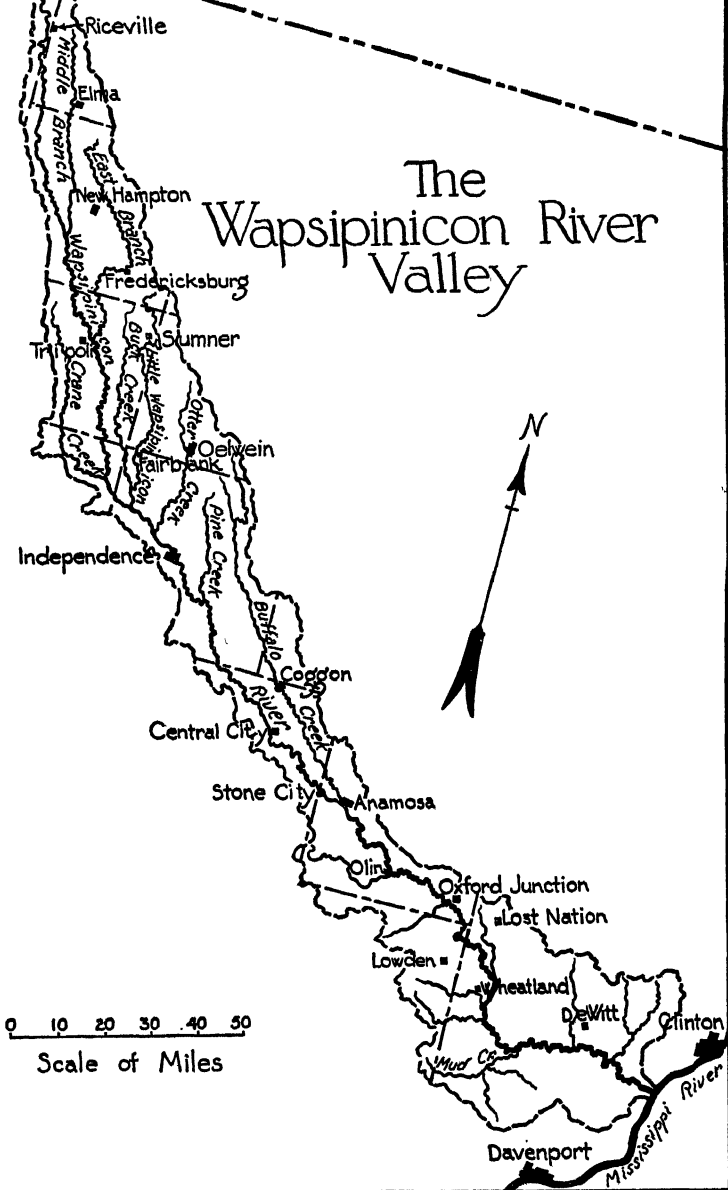
The Wapsipinicon is one of the most beautiful rivers of Iowa. Rising in Mower County, Minnesota, it flows in a southeasterly direction for 255 miles, emptying into the Mississippi about twelve miles below Clinton. It is the fifth largest Iowa tributary of the Mississippi, being surpassed in length only by the Des Moines, the Cedar, the Iowa, and the Skunk. The Wapsipinicon drains 4.5 per cent of the total area of the State, or three times as much as the Upper Iowa.¹⁵⁸

The Wapsipinicon is virtually all Iowan, for, although it rises in Minnesota, it flows a scant two miles before entering the Hawkeye State. During the course of its journey it passes through or along the border of eleven Iowa counties — Mitchell, Howard, Chickasaw, Bremer, Black Hawk, Buchanan, Linn, Jones, Cedar, Clinton, and Scott. The altitude at the source is 1250 feet and at the mouth 564 feet: hence the river falls 685 feet in the course of its meanderings, or 2.68 feet per mile. This is less than half the fall of the swift Turkey River.

Because of its narrow valley the Wapsipinicon possesses no major tributary. Buffalo Creek is the largest auxiliary waterway and it drains only 231 square miles. Otter Creek and the Little Wapsipinicon are less important tributaries. Most of these rivers follow channels parallel to the Wapsipinicon, deviating from their course shortly before they join the main stream. From its source to within thirty miles of its mouth, the Wapsipinicon parallels the Cedar River at an average distance of about thirteen miles. Indeed, for a stretch of 180 miles, the basin averages scarcely more than fifteen miles in width.

MINNESOTA

The Wapsipinicon River Valley



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The topography of the upper basin of the Wapsipinicon is gently undulating with little evidence of long-continued erosion except along the larger tributaries. The central and lower portion of the valley is more sharply rolling. This region, greatly modified by erosion and weathering, possesses well-defined terraces and narrow valleys. Rocky, precipitous cliffs predominate in many places, the region around Wapsipinicon State Park being one of the most rugged spots in the valley. There the Big Woods, Horse-thief Cave, and the winding trails along Duchess Creek afford interesting facilities for recreation.¹⁵⁹

Despite its narrow basin the Wapsipinicon has been subjected to floods, which are most severe in the upper valley. Overflows generally occur in the spring, but in August, 1858, heavy rains around Independence caused the Wapsipinicon to rise fifteen feet in twenty-four hours, flooding buildings and damaging crops. Heavy snows and terrific rains in the spring of 1865 caused the swollen river to sweep away the bridge at Independence. At Quasqueton the bridge and dam, together with Pratt's sawmill and gristmill, were also destroyed. So devastating was that flood that hardly a Buchanan County bridge was left intact. Another spectacular flood occurred in 1871 when the ice went out with a roar, carrying everything away that stood in its path.¹⁶⁰

On July 2, 1892, a downpour of 3.35 inches of rain at Independence set a high-water mark when an estimated flow of 20,000 cubic feet per second was registered at Stone City. This high-water record was eclipsed by about eight inches on May 18, 1902, when 3.70 inches of rain was

The Wapsipinicon River

recorded in the Independence area. Great damage was done all along the course of the river. At Independence, sheds, boathouses, and other buildings were swept away, the greatest regret being expressed by all when the little steamboat *Iowa* was caught in the vortex of the raging stream and dashed to pieces below the dam. Such floods were common. In 1903 a Muscatine editor observed that the Wapsipinicon was on the rampage and was flooding the lowlands known as the Wapsipinicon bottoms. Heavy damage was done to corn and other crops and one man in the vicinity of Wheatland was drowned while attempting to move his cattle to higher ground.¹⁶¹

The earliest travelers in Iowa considered the Wapsipinicon to be a navigable stream because of its great length. This belief was due largely to the lack of information. Even Albert M. Lea spoke of the "Wabesapinica" in the "most general manner" and he was one of the best informed pioneers. "About 30 miles above its mouth", Lea related, the Wapsipinicon "is 70 yards wide; and as it is unusually deep for its width, and no obstructions are known in it, it is probable that it will be navigated for many miles. Two men ascended it last summer about 200 miles in a canoe."¹⁶²

Six years later another report on the Wapsipinicon was made by John B. Newhall, the most successful of Iowa press agents. "Navigation on this river will be somewhat obstructed by a crooked channel, and very rapid current. Its rises are sudden and frequent. It affords much valuable water power for mills and machinery, and it is confidently believed by many to be susceptible of steamboat navigation

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for boats of light draught." Few large streams, however, were destined to play such a minor rôle from the standpoint of navigation. True, the tiny steamboat *Iowa*, which was launched at Independence in 1898, ran excursion parties above the Independence dam before it was swept away by a flood.¹⁶³ Commerce in its broader sense, however, was lacking on the shallow Wapsipinicon.

Nevertheless, the river was broad and deep enough to require ferries in the days before bridges were built. In the spring of 1838, Benjamin Doolittle established the first ferry across the "Wabesipinicon" to take care of travelers between Davenport and Camanche. Two years later Gilbert Marshall was running a flatboat ferry at Point Pleasant. Until bridges were constructed ferries continued to operate at strategic points along the river. Even at Independence, 142 miles above the mouth, pioneers on their westward migration had to resort to a ferry.

Bridges were built over the Wapsipinicon as soon as the population was sufficient to bear the cost of such conveniences. Prior to the Civil War bridges had been erected at Littleton, Independence, and Quasqueton in Buchanan County. The first bridge of any importance in Jones County was thrown across the Wapsipinicon at Anamosa where the old Military Road from Dubuque to Iowa City crossed the river. Congress appropriated \$20,000 in March, 1839, to build the road. The bridge at Anamosa alone cost \$2900.

A number of other bridges spanned the Wapsipinicon and Buffalo Creek in pioneer days, those at Overacker's Ferry, at various mills (Oxford and Fremont), and at Bal-

The Wapsipinicon River

lou's stone quarry being among the better-known bridges. Construction on the Ballou bridge began in 1869 and it ultimately cost nearly \$8000. Most of these early bridges were of comparatively fragile structure, however, and seldom survived a flood.¹⁶⁴

Dams, too, were built across the Wapsipinicon. On January 18, 1842, Governor John Chambers approved an act of the Territorial legislature authorizing Perriander Pollock and his associates to build a dam across the "Wabesipinicon" in Township 80 in Clinton County. The law provided that the dam "shall not exceed two and a half feet in height, above common low water mark; and in said dam, shall be constructed a lock or apron, at least thirty feet wide, and eighty feet long, so as to admit of boats to descend, and ascend, with safety." The builders of the dam were not allowed to "flow the lands of any person" or "endanger the health of the vicinity." A heavy fine could be assessed against any one who "wilfully or maliciously" attempted to destroy or injure the dam.¹⁶⁵

The pioneers of the Wapsipinicon Valley found plenty of water power for mills. The narrow valley and constant flow of water afforded some excellent mill sites. In Buchanan County alone there were ten improved water-power sites by 1865. Quasqueton had a "custom mill" several years before Independence erected the "New Haven Mills" in 1854. As a result the pioneers for miles around brought their grain to Quasqueton. A sawmill was established at Independence as early as 1847.¹⁶⁶

Very little of Linn County lies in the valley of the Wapsipinicon, but at Central City and on Buffalo Creek in the

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vicinity of Coggon excellent mill sites were utilized. "These streams, and their multitudinous branches," a Linn County visitor wrote in 1858, "furnish an abundance of water and of water power."

Anamosa, located at the confluence of Buffalo Creek with the Wapsipinicon, harnessed the water power of both streams. "A day spent in Anamosa has caused us to fall in love with the place," wrote a traveler on December 11, 1858. "The population of the city is upwards of one thousand. The 'Wapsy' runs on its south side, and is spanned by a substantial bridge between two and three hundred feet in length. Near it is a new and excellent flouring mill owned by METCALF, GRAHAM & CO. It has three run of stones. They are of the 'Burr' order, and one of them burst into a thousand pieces last night, while under full motion, sending the fragments in all directions, some of them passing through the building into the river . . . Half a mile north of the city is the stone flouring mill of FISHER & SON, another durable and just now highly industrious establishment. It has also three run of stone. There are three saw mills in the town".¹⁸⁷

The whole length of the Wapsipinicon Valley is rich in historical associations. In Mitchell County the towns of Bailey, McIntyre, and Riceville are located on the river. Riceville, named in honor of a pioneer family, is unique in that the main street of town follows the line between Howard and Mitchell counties.

After leaving Riceville the Wapsipinicon meanders for a distance of over fifty miles before it passes through another town — Frederika, named in honor of the noted

The Wapsipinicon River

Swedish novelist, Frederika Bremer, after whom Bremer County was named.

At Fairbank on the Little Wapsipinicon is an Amish Mennonite settlement. Members of this sect refuse to use automobiles, tractors, and similar conveniences. They dress as their ancestors did and travel by horse and buggy. Another such settlement of "Hook and Eye Dutch" is located at Littleton, just below the confluence of the Little Wapsipinicon with the main stream. Near Coggon, on Buffalo Creek, stood the now extinct village of Sodtown, whose buildings were made of sod blocks. This construction was uncommon in eastern Iowa, where plenty of timber made the log cabin typical.¹⁸⁸

Beautifully situated on the oak-crested banks of the Wapsipinicon, Independence is the second largest city in the valley, counting 4342 inhabitants in 1940. Charles W. Williams brought fame and fortune to this community when he bred two champion trotters — Axtell and Allerton — and built a kite-shaped race track which became renowned as the "Fastest Track on Earth". Williams sold Axtell for \$105,000 in 1889 and inaugurated the "Williams Boom" which gained for Independence the appellation of the "Lexington of the North".¹⁸⁹

The region around Anamosa (located at the confluence of Buffalo Creek with the Wapsipinicon) is particularly historic. During pioneer days the lower valley of the Wapsipinicon afforded an excellent hideout for horse thieves, counterfeiters, and other desperadoes. To quell these outlaws the respectable citizens of the community took prompt and severe measures of repression. One of the best-

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known bands of regulators in Iowa was the Wapsie Rangers. This organization gradually eliminated criminals from western Clinton County and the adjoining territory. Several hangings occurred; particularly dramatic was the execution of Bennett Warren.¹⁷⁰

Possibly this historical background of crime was partially influential in locating the "Additional Penitentiary" at Anamosa. It is more likely, however, that the General Assembly had a more utilitarian motive in mind, for it specified that the new institution should be established "at or near the stone quarries near Anamosa". The first quarry in this area was opened on Buffalo Creek in 1853 to build Fisher's gristmill. In the years that followed a number of other quarries were started by such men as "Dutch John" Burheim, Henry Dearborn, and J. A. Green. Stone for the government buildings at Rock Island, the Independence State Hospital, the Iowa School for the Blind at Vinton, the Iowa School for the Deaf at Council Bluffs, and the Men's Reformatory at Anamosa was procured from such notable quarries as the "Champion Quarries" and the "Stone City Quarries" located on the Wapsipinicon and Buffalo Creek. These outcroppings of Anamosa limestone have also furnished materials for railroads, homes, and other projects throughout Iowa and in adjoining States.¹⁷¹

To this former hide-out of horse thief and counterfeiter came George W. Matsell, noted New York City police superintendent. Matsell, probably intent on escaping from the criminal atmosphere of the metropolis of America, built a retreat on a wooded cliff overlooking the Wapsipinicon near Viola. This palatial residence was once sur-

The Wapsipinicon River

rounded by a 3000-acre tract of land stretching along the river. Butlers, footmen, and peacocks strutted on the green lawn. A little theater provided entertainment for family and friends. The "Chief" especially enjoyed fishing for black bass, pickerel, and the "unclassic redhorse" in the Wapsipinicon.¹⁷²

East of Anamosa is the boyhood home of Grant Wood. To the west is the village of Stone City, once a flourishing settlement but now a collection of deserted but still impressive limestone buildings. Portland cement spelled doom to this community whose founders had high hopes of furnishing their limestone to the surrounding country for construction purposes. During the summers of 1932 and 1933 an art colony at Stone City under the supervision of Grant Wood drew wide attention to that picturesque place.

Waubeeek is another unique village located in Maine Township of Linn County. There the town of Paddington was laid out by Ezra Nuckolls and George Paddington. A few years later the village of Waubeek was laid out adjoining Paddington on the northwest. Canfield J. Marsh was named first postmaster of Waubeek on September 10, 1858. Many of the original settlers were seamen from the New England coast. The village is rich in traditions of pioneer life; many relics can still be found in the private homes. The dulcimer, an ancient musical instrument, is still heard in Waubeek, the birthplace of Jay G. Sigmund, beloved poet of the soil.¹⁷³

The Wapsipinicon Valley contains four cities which in 1940 had a combined population exceeding 19,000. Oel-

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wein, the largest, with 7801 inhabitants, is an important division point of the Chicago Great Western and possesses the large railroad shops of that company. New Hampton contained 2933 inhabitants, Anamosa 4069, and Independence 4342. DeWitt, the fifth largest and southernmost city in the Wapsipinicon Valley, was named for DeWitt Clinton, Governor of New York. It was once the county seat of Clinton County. The northernmost city is New Hampton, the county seat of Chickasaw County. Originally known as Chickasaw Center, New Hampton was renamed by Osgood Gowen for his old home town in New Hampshire.¹⁷⁴

Since 1900 there has been a tendency for these cities to increase slightly in population, a tendency that is true for similar towns in northeastern Iowa. By the same token the smaller towns and rural areas of these valleys have tended to decline in population. Despite a larger urban population than the other valleys of northeastern Iowa, the Wapsipinicon basin retains its picturesque character. In legend and history, in the wealth of its resources, and in scenic interest, the Wapsipinicon Valley offers many attractions.

THE CEDAR RIVER

"IN POINT of beauty and fertility" the Cedar River Valley "is unsurpassed by any portion of the United States", Major William Gordon declared after a trip through the region in August of 1835. Lieutenant Albert M. Lea, who crossed the Cedar River and its tributaries with the United States dragoons that same year, was equally delighted with the "rich meadows, deep forests, projecting cliffs, and sloping landscapes" which presented "the finest picture on earth of a country prepared by Providence for the habitation of man." ¹⁷⁵

The same glowing praise of the valley of the Cedar was bestowed by such men as J. N. Nicollet and John B. Newhall. In 1841 Newhall described the Red Cedar River as the "main branch" of the Iowa River. It carried more water than the Iowa, its current was rapid, and its channel wide, although "much obstructed" by sandbars. Newhall found the fertile land in Cedar County "interspersed with heavy bodies of timber, which contribute an ample supply to the numerous mills that skirt its banks." Higher upstream the Cedar River rolled "majestically" through Linn County "affording abundance of stock water for most of the farms, and advantageous waterpower for mills and machinery." ¹⁷⁶

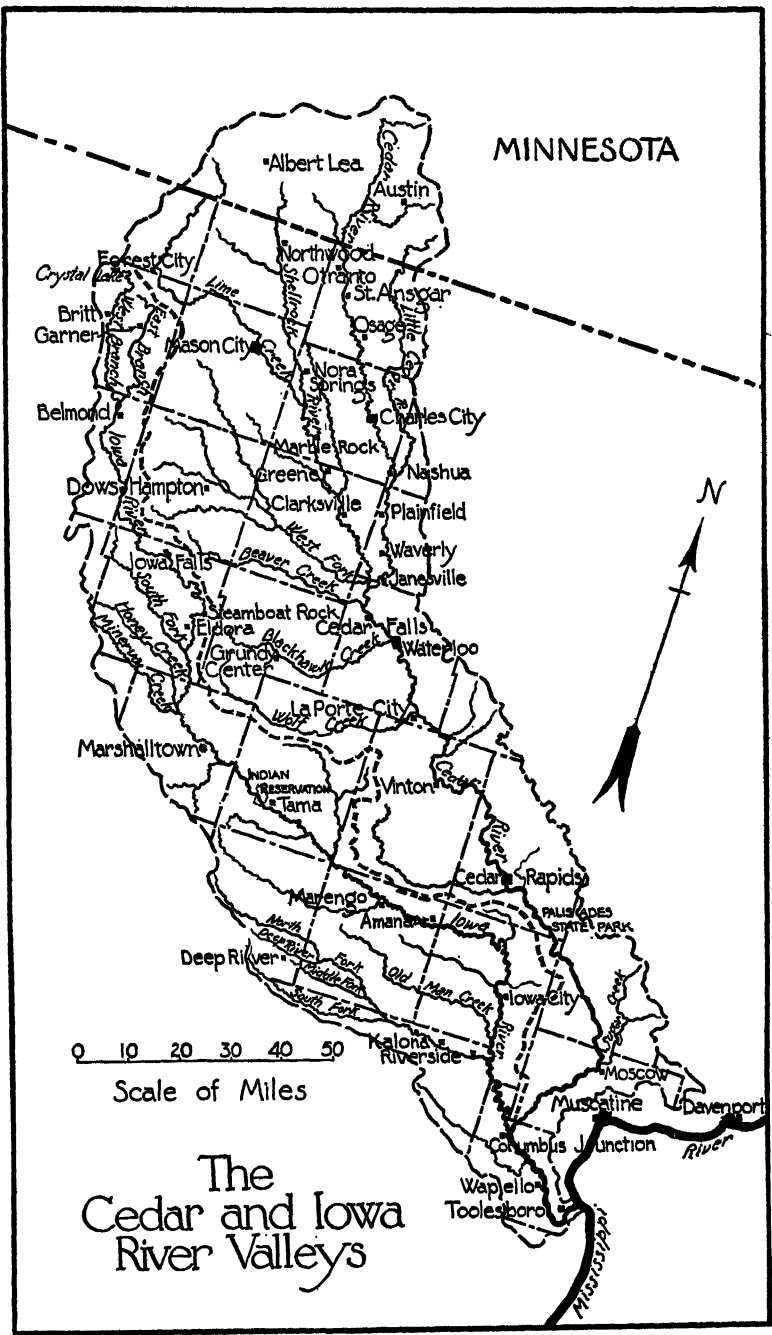
Toward evening on July 18, 1845, as George W. Hanna halted his prairie schooner on the east side of the Cedar

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River at the present site of Waterloo, Mary, his wife, struck with the beauty of the rolling prairie on the other side, exclaimed, "Boys, don't stop here. This seems to me to be the river of life and over yonder is Canaan; let us cross over." The town of Waterloo was laid out on the west bank of the Cedar in 1853 by George W. Hanna, Charles Mullan, and G. W. Brooks.

During the 1850's the western fringe of settlement occupied the northern reaches of the Cedar Valley. One enthusiastic observer, Nathan H. Parker, called attention to the rich soil of this region with its "thousands of acres covered with an excellent growth of oak, walnut, ash, linn, maple, hickory, elm, and cotton-wood." He found an "excellent quality" of rock along the river, particularly at Cedar Falls. "Central Iowa", he announced, "is the best body of land in the State; and, in all probability, the State of Iowa is the best in the United States."¹⁷⁷

Newspapers frequently sent out reporters to describe conditions in the rapidly growing communities. Typical of such journalistic explorers was Jesse Clement, a reporter for the Dubuque *Weekly Times*, who combed the territory between the Mississippi and the Des Moines rivers, visiting almost every town along the Cedar.¹⁷⁸ Most of Clement's observations were made during the fall and winter of 1858-1859. He found the water power at Cedar Rapids "superior" to that at Cedar Falls because of its greater volume. He felt Vinton was sure to rise because Benton County was very fertile, well watered, had an abundance of timber and limestone, and held out "strong inducements" to settlers. La Porte City, the only important vil-



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lage between Vinton and Waterloo, possessed every element of success.

Unlike Newhall, who praised extravagantly everything he saw, Clement could criticize if circumstances warranted. This observant reporter could say little for the "dull town of Janesville" despite its pleasant location on the Cedar River. On the other hand, he liked Waterloo "with the music of her water-fall; her elegant private houses; her peerless court house; her neat church edifices; her excellent schools; her good hotels and other indices of thrift and culture". After visiting the towns beside most of the rivers that flowed into the Mississippi, Clement concluded that the Cedar was "the loveliest of Iowa streams". It is not surprising that such descriptions should have encouraged a flood of immigration in the Cedar Valley.¹⁷⁹

Little was known of the Cedar River before the coming of the first pioneers, perhaps because the Iowa River gave its name to the Cedar below their junction. The Sauk and Fox name was Moskwahwakwah because of the large number of red cedar trees along its banks. Lieutenant Zebulon M. Pike called attention to the Cedar as his keelboat glided past the mouth of the Iowa: "In Ascending Iowa river 36 miles you come to a fork, the right branch of which is called Red Cedar river (from the quantity of that wood on its banks)". It was left for J. N. Nicollet to explain the reason for this unusual growth of red cedars. According to him the river deposited many sandbars along its lower course, "the soil of which is congenial to a vigorous growth of the red cedar; whence the river derives its name."¹⁸⁰

Early map makers, who probably based their delineation

The Cedar River

of the Cedar River on Pike's description, were guilty of many misrepresentations. According to William Clark's map of 1810 the Iowa River was the more important, for the stunted Cedar extended only about as far north as present-day Cedar Rapids. There its course was blocked by the Wapsipinicon, whose source lay as far west as Marshalltown. Arrowsmith's map of 1814 contained the same errors.¹⁸¹

More accurate information had been obtained before the Black Hawk War, for the treaty of 1832 drew the western boundary of the Black Hawk Purchase from a point on the southern boundary of the Neutral Ground to the "nearest point on the Red Cedar of the Ioway, forty miles from the Mississippi" (near Cedar Bluff); thence in a straight line to a point on the northern boundary of the State of Missouri, fifty miles from the Mississippi.¹⁸²

It was not until Albert M. Lea toured the Iowa prairies in 1835, however, that the Cedar River was accurately located. "It so happens," J. N. Nicollet observed, "contrary to the received principles of descriptive geography, that Red Cedar river loses its name after emptying into the shorter branch, which maintains that of the Iowa. It is true, that these names were established before it was known which of the two was the more important. To Albert C. [sic] Lea, esq., must be assigned the credit of having first laid down the course of Red Cedar river, the whole length of which is not less than 350 miles".¹⁸³

Although Lea admitted that the Cedar River, which was marked "Iowa or Red-Cedar" on his map, was far larger than the waterway he had designated "*Bison R. usually*

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called Iowa River", he presented two reasonable explanations for naming the eastern fork the Iowa River: first, because below the junction with the "Bison" the larger stream was "universally called *Iowa*;" and second, because there were other streams called "Red-Cedar" in the Iowa District.¹⁸⁴

In the years that followed geographers and gazetteers assumed that the Cedar was longer than the Iowa River. Actually, they are each 300 miles long when measured from their headwaters to their union at Columbus Junction. An additional 28.4 miles is generally added to the Iowa River — the distance from Columbus Junction to the confluence of the Iowa with the Mississippi. It is interesting to note, however, that the United States Army Engineers measure the mileage of both streams from the Mississippi, thereby making each of them 329 miles long.¹⁸⁵

In spite of their identical length the two rivers vary greatly in most other physical features. The Iowa River has no important tributaries except the English River, hence it possesses a relatively narrow watershed and discharges a relatively small quantity of water. The Cedar, on the other hand, is fed by several rather large tributaries, has a broader basin, and consequently carries a far greater seasonal discharge. Because of these facts the main tributaries of the Cedar River deserve special mention.

The Little Cedar has its source in Minnesota and joins the Cedar at Nashua. The headwaters of this stream are close to those of the Wapsipinicon and the Upper Iowa in Mower County. The Little Cedar, the only important eastern tributary of the Cedar River, drains a basin of 315

The Cedar River

square miles, or eighty square miles more than the Yellow River.

The largest western tributary of the Cedar is the Shellrock River. This picturesque stream rises in Albert Lea Lake in Minnesota and empties into the Cedar about five miles above Cedar Falls. It drains a basin of 2660 square miles, an area greater than that of the Wapsipinicon and almost equal to the Iowa River basin above Marengo. The physical characteristics of few Iowa streams have been more influential in determining the names of towns — Northwood, Rock Falls, Nora Springs, Rockford, Marble Rock, and Shellrock. Lime Creek, which rises in Minnesota and flows through Fertile, Mason City, and Portland, empties into the Shellrock above Rockford. Another important tributary of the Shellrock, called the West Fork, enters that stream just above its confluence with the Cedar.

The broad valley of the Shellrock and its numerous tributaries contains some of the richest land in the Hawkeye State. Most of Worth, Cerro Gordo, Franklin, Floyd, and Butler counties are embraced in this area while portions of Winnebago, Hancock, Bremer, and Black Hawk counties pay tribute to this beautiful stream. Corn and oats are the principal crops but the region is perhaps best known for dairying, the Shellrock Valley marking the western limits of the dairy area of Iowa. In addition to Mason City and the towns already mentioned one may visit such flourishing communities as Allison, Hampton, and Clear Lake. The valley of the Shellrock affords numerous opportunities for recreation — Rice Lake, Pilot Knob, Clear Lake, Beeds Lake, and Heery Woods State

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parks all lie within the broad basin of this picturesque stream.

In addition to the Little Cedar and the Shellrock there are other important tributaries. Blackhawk Creek joins the Cedar River at Waterloo; Wolf Creek near La Porte City; and Prairie Creek below Cedar Rapids. These streams, together with the lesser tributaries, give the Cedar River a total drainage of 7870 square miles of which 6845 square miles are in twenty-two counties of Iowa. The significance of this large basin may be seen by studying its discharge which is larger than that of the Iowa. Thus, at the confluence of the Cedar and Iowa rivers at Columbus Junction the Cedar drains 7870 square miles and discharges an average of 4064 cubic feet of water per second. The Iowa drains 4375 square miles above its junction with the Cedar and discharges an average of 2300 cubic feet of water per second, which is almost the same ratio as the Cedar.¹⁸⁶

By way of describing the Cedar River let us take an imaginary canoe trip from its headwaters to its union with the Iowa River at Columbus Junction. Such a journey would be possible during a favorable stage of water, though thirteen power dams and six abandoned dams would necessitate portages. Almost every year canoeists undertake to paddle down the Cedar and other beautiful Iowa streams.

The sources of the Cedar River lie in the marshy depressions of the glacial drift near Hayfield in southwestern Dodge County, Minnesota, 329 miles from the Mississippi and 1310 feet above sea level. It falls 740 feet during its 300-mile journey to Columbus Junction. Across Mower

The Cedar River

County in Minnesota, the main branch flows southward through Austin in a shallow, young, but well-defined valley.

The Cedar River enters Iowa in Mitchell County at a distance of 292.2 miles from the Mississippi. It is relatively young, carving its valley in the drift of the Iowan ice sheet which was probably deposited as recently as 50,000 years ago. Here and there the mantle of glacial till has been washed away, exposing precipitous bluffs of Devonian limestone.¹⁸⁷

Slipping past Otranto with its valuable ginseng arbor, the Cedar reaches St. Ansgar, a small community settled by the Czechs in 1853 that still retains the flavor of Old World customs. Our canoe next skims past Spring Park, just a mile west of Osage and 268.4 miles from the Mississippi. Hamlin Garland spent his boyhood on a farm near Osage and attended Cedar Valley Seminary, as he vividly revealed in *A Son of the Middle Border*.

As the modern voyageur paddles through Floyd County past the little town of Floyd he may see on every hand clay, sand, and gravel, large quantities of high-grade ochre, and outcroppings of building stone. From this point southward for twenty-four miles the Cedar winds through a land covered with wild plum, crab apple, grape, gooseberry, black cherry, elderberry, and black haw. Presently Charles City appears on both banks of the river, 246.5 miles from the Mississippi, the most populous town between Austin and Cedar Falls. Jesse Clement described Charles City in 1859 as the "gem of the towns on the Cedar", filled with "live and thrifty Yankees" whose sole

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aim was to build the town. "It will not become as large as Cedar Rapids or Cedar Falls," Clement prophesied, "but like Waverly on the same stream, will be sure to rise to some eminence." Eighty-one years later the Hart-Parr Works was shipping trainloads of tractors to the markets of the world.¹⁸⁸

A dozen miles below Charles City the river tourist would portage around the ninth dam since setting out from the headwaters of the Cedar River. This dam is located at Nashua, just above the confluence of the Cedar with the Little Cedar. Close by, on the Little Cedar, stands the almost deserted village of Bradford. On January 29, 1859, five years before the "Little Brown Church in the Vale" was dedicated at Bradford, Jesse Clement praised this "charmingly located" community in its "oak opening" on the Little Cedar. "The trees are sparse, just enough being left standing to ornament the village. It must be a delightful place in the rosy month of June. . . . 'Greenwood', the southern outcropping of the village, is a lovely spot, and has a small collection of neat framed houses, painted white, the color of most of the buildings in Bradford." Two years earlier Dr. William Pitts had immortalized this spot in the words of his hymn:¹⁸⁹

There's a church in the valley by the wildwood,

No lovelier spot in the dale.

No spot is so dear to my childhood,

As the little brown church in the vale.

From Nashua the Cedar continues in a southerly direction past Plainfield, Waverly, Janesville, and Cedar Falls. Just as Hamlin Garland wrote of his boyhood home, so

The Cedar River

Bess Streeter Aldrich has vividly portrayed the yesteryears of her home town of Cedar Falls in *Song of Years*.¹⁹⁰

Seven miles below Cedar Falls we dock our imaginary canoe at Waterloo, the second largest city in the Cedar Valley and the fifth largest in the State. Platted in 1853, bustling Waterloo has skyrocketed in population from 1800 in 1860, to 12,580 in 1900, to 36,230 in 1920, to 51,614 in 1940. Railroad shops, meat-packing plants, and farm-machinery factories have been the principal industries of this manufacturing community, once the head of navigation, situated 184.4 miles from the Mississippi.¹⁹¹

Downstream the river passes only Gilbertville, La Porte City (a mile up Wolf Creek), and Vinton in a distance of 75.4 miles before reaching Cedar Rapids, the metropolis of the Cedar Valley and the fourth largest city in Iowa. There, in 1838, Osgood Shepherd built the first settler's cabin. "This place was laid out in 1842," Nathan H. Parker wrote in 1856, "and has now a population of more than 2,700 inhabitants. The Cedar River at this point flows over a rocky ledge in the river, forming an extensive rapid, which is capable of being improved to almost any extent. . . . The principal manufactories are eight flouring-mills, five saw-mills, two planing-mills, one paper-mill, one foundry, and an agricultural implement manufactory, one woolen factory" and two sash and door plants. In addition to these, Parker mentioned eight brickyards, eighty-three general stores, three banks, three newspapers, and a land agency. A large amount of grain was exported annually. Well equipped with patent machinery, the two flourmills of the Honorable H. G. Angle were prepared to grind

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wheat at home in 1860 while he was "grinding out laws at Des Moines". "Reader," Parker solemnly concluded, "Cedar Rapids is a '*smart place*,' and, when you are searching Iowa for a good location, take a careful survey of this point."¹⁹²

A "smart place" indeed is Cedar Rapids with its population of 62,037 in 1940. Meat packing, road machinery, corn products, and breakfast foods are the principal industries that make Cedar Rapids important. The "Parlor City" of Iowa is also proud of its Memorial Building, Coe College, and the Masonic Library.¹⁹³

Leaving Cedar Rapids behind, the river navigator would soon reach a scenic region known as the Palisades of the Cedar River. Grim limestone cliffs consisting of massive layers of dolomite rise from thirty to seventy-five feet above the river. Once the hide-out of outlaws, this beautiful spot has been designated as the Palisades-Kepler State Park. The cliffs are fringed with red cedars, much as the pioneers first saw them a century ago, and prehistoric remains found along the Palisades are mute testimony that the region was once a favorite haunt of the red man.¹⁹⁴

A few miles below, where U. S. Highway 261, following the route of the Old Military Road, crosses the river, the village of Ivanhoe was established in 1838. Not a vestige remains of the town that was planned to become the commercial and cultural emporium of the region. Two small towns, Cedar Bluff and Cedar Valley, once prominent because of their stone quarries, have seen better days. Rochester, also, at the crossing of the pioneer road between Iowa City and Davenport, has all but disappeared.¹⁹⁵

The Cedar River

At Moscow the Cedar suddenly careens to the southwest after approaching within ten miles of the Mississippi. The pioneers once thought a canal could be dug to link Moscow with the Mississippi at Muscatine.¹⁹⁶ Indeed, in interglacial times, the Cedar probably followed that course. When the Illinoian ice sheet pushed in from the east it forced the Mississippi out of its channel, blocked the outlets of the Cedar and Iowa rivers, and formed a large lake. After the ice melted and the Mississippi returned to its old course, the Cedar appropriated the bed the Mississippi had occupied for a distance of thirty miles to the junction with the Iowa. Together they broke through the terminal moraine and released the waters of prehistoric Lake Calvin. The construction of a huge flood-control dam at Moscow, as recently proposed, would on occasion of high water partially restore an arm of the ancient glacial lake.¹⁹⁷

The pioneers thought of the Cedar River in terms of transportation. Zebulon M. Pike believed that the river was navigable for nearly 300 miles by bateaux, or nearly to the Minnesota line. Lea thought that boats could easily run "to the mouth of the Shell-Rock river, near the Neutral Grounds." The Cedar was, in fact, destined to afford the means of various types of transportation from canoe to steamboat.¹⁹⁸

Prior to the settlement of Cedar County a French fur trader used a keelboat to transport pelts downstream from the Indian trading post located near the site of Rochester to St. Louis. Early in May, 1838, the steamboat *Pavilion* ascended the Iowa River to present-day Columbus Junction with more than fifty passengers aboard.¹⁹⁹

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The voyage of the *Pavilion* was so successful that the citizens of Rochester arranged with the captain of the steamboat *Ripple* to venture up the Cedar River in 1841. At least 400 persons gathered at Rochester to witness this momentous event. "Many and various were the speculations in relation to the probability or possibility of the boat reaching its destination", wrote a spectator in the *Iowa City Standard* on July 1, 1841. "Some urged the impossibility — others admitted the possibility, but would not admit the probability, whilst others — full of hope and expectation — insisted that the boat would certainly arrive. While speculations of this kind were running very high, some one caught the sound of the approaching vessel, and exclaimed at the top of his voice, 'she comes, she comes!' All eyes and ears were now directed to the quarter whence the sound proceeded; and in a few moments the boat was seen stemming the current, and approaching rapidly the place of her destination. From this moment the 'impossibilities' and 'improbabilities' were forgotten, and all present joined in with the universal interest which the occasion excited." A dinner was served and the pioneers drank toasts to the "navigable stream running close by their doors" which seemed destined to reward them for the "toils and privations" they had undergone. The spectator believed that Rochester would become a great emporium if only "sufficient inducements" were offered steamboats to ply regularly on the Cedar.²⁰⁰

Having reached Rochester, sixty-eight miles from the Mississippi, steamboat captains next endeavored to ascend as far as Cedar Rapids. On October 22, 1842, the *Iowa*

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Capitol Reporter optimistically declared the Cedar navigable several months each year for light-draft steamboats. Since the river afforded shipping facilities for both keelboats and flatboats as far as the rapids (at Cedar Rapids), this point became of "great interest" to Linn County and the country beyond. With uncanny foresight the Iowa City editor prophesied that the rapids would one day provide power for "merchant mills and all kinds of machinery" at the head of navigation.

During the following years a number of steamboats churned the waters of the Cedar River. In August, 1844, the *Maid of Iowa* arrived at Cedar Rapids with a number of settlers, some of whom were Mormons. A rousing Methodist exhortation was delivered from the deck of the boat by the Reverend Isaac Searles. In 1853 the 109-ton *Uncle Toby*, a veteran upper Mississippi steamboat, docked at the Cedar Rapids landing. Citizens of the "Parlor City" could point with pride to the fact that water transportation had progressed farther upstream on the Cedar than on any other river in the State except the Des Moines.²⁰¹

But steamboating on the Cedar was destined not to stop at Cedar Rapids. The voyages of the *Black Hawk* to Waterloo form a unique chapter in the story of steamboating on the interior waterways of Iowa. Built at Cedar Rapids in 1858, this historic craft was originally named the *Export*. She was constructed by T. G. Isherwood from lumber cut in what is now Bever Park, Cedar Rapids. The *Export* made a trial trip on September 30, 1858, in command of J. J. Snouffer. On the following day she left for Waterloo with sixty tons of freight. Upon her arrival the

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captain gave a free excursion. The *Export* continued in the trade until ice began to form in mid-November.

During the ensuing winter the *Export* was entirely remodeled and named the *Black Hawk*. On March 16, 1859, the new craft steamed upstream to Vinton to open the season of navigation. She made several trips between Vinton and Cedar Rapids before the ice was out above. It was not until April 2, 1859, that the *Black Hawk* set out for Waterloo. Her arrival was recorded in the *Waterloo Courier* of April 5th. "To-day, at a little past noon, our citizens were not a little gratified by the sight of the steamer *Black Hawk*, a short distance below the lower ferry, plowing her way up stream against the stiff current of the Cedar, like a thing of life. She ran up to a point just above Fifth Street, where she made fast to the shore, and was received with hearty cheers by the crowd assembled to witness her first arrival of this season." A large amount of freight was on hand and the captain soon departed rejoicing. The *Black Hawk* made twenty-nine round trips between Cedar Rapids and Waterloo in 1859, her fastest time being twenty-seven hours for the 150-mile round-trip. At the close of the season she had netted her owners \$2000.

Early in 1860 the *Black Hawk* struck a snag and was forced to withdraw to the lower Cedar because of shallow water. During the Civil War she carried supplies to the Union forces on the Tennessee and Cumberland rivers. Later it was rumored that the *Black Hawk* engaged in blockade running on the Mississippi for the Federal forces. Her colorful career closed suddenly when she struck a snag near Memphis and blew up.²⁰²

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Second only to the *Black Hawk* in point of interest is the story of the steamboat *Cedar Rapids*. Constructed at Freedom, Pennsylvania, in 1858, this \$20,000 craft was 155 feet long, twenty-six feet beam, and three feet depth of hold. She was a stern-wheeler with a single deck, and was built on contract for George Greene, W. H. Merritt, J. F. Ely, S. D. Carpenter, and the Daniels family. During the seasons of 1858 and 1859 the *Cedar Rapids* made several trips between her home port and St. Louis. Her advent in the Cedar River trade was said to have been of tremendous importance in reducing the price of commodities, making Cedar Rapids a cheap trading center. On May 6, 1859, while bound down the Mississippi for St. Louis, the *Cedar Rapids* collided with the *Lucy May* near La Grange, Missouri. The *Lucy May* sank with a loss of several lives, and in the litigation which followed the *Cedar Rapids* was lost by her owners. She never returned to the Cedar River and her home port. The *Cedar Rapids* was finally sold down south and was burned at Arkansas Post on the White River in 1862.²⁰³

In later years smaller craft like the *Surprise*, the *Nettie Munn*, the *Carrie Wallace*, the *Kitty Clyde*, the *Rose*, the *Climax*, the *Kbedive*, and the *General Weaver* plied the winding Cedar. The services of these vessels were restricted, however, so they were never as significant as the *Pavilion*, the *Ripple*, the *Maid of Iowa*, the *Black Hawk*, and the *Cedar Rapids*. By 1860 railroads had reached the Cedar River at Moscow, Cedar Rapids, and Waterloo. Thereafter the pioneers were no longer dependent on water transportation. Finally, on May 6, 1870, Congress de-

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clared the Cedar-Iowa "north of the town of Wapello" unnavigable. In 1894 a similar act of Congress authorized the construction of bridges and dams between Wapello and Toolsboro.²⁰⁴

Ferries were placed in operation across the Cedar before bridges and dams were constructed. The first ferry across this stream was located at Rochester by George McCoy. William Hendrickson, the first blacksmith at Moscow, operated the first ferry at that point in Muscatine County. David W. King ran a ferry at Cedar Rapids until his death in 1854. The construction of a bridge at Cedar Rapids in 1857 did not eliminate ferry service immediately for the bridge was washed out by the spring flood that year. A second bridge went out with the ice gorge in 1858. The ferry accordingly carried "much business" throughout this period and was even used to connect May's Island with the western bank until a strong bridge was built there.²⁰⁵

On October 12, 1853, Judge J. R. Pratt of Black Hawk County granted Samuel L. May a license to operate a ferry across the Cedar at Waterloo for ten years and charge the following tolls: for each footman, five cents; man and horse, fifteen cents; one horse and buggy, twenty cents; two horses and wagon, twenty-five cents; four horses and wagon, fifty cents; neat cattle and horses per head, ten cents; sheep or hogs per head, three cents. An unusual feature required the Waterloo ferryman to carry all churchgoers free of charge on the Sabbath. He was also required to ferry voters free on election day.²⁰⁶

The Cedar flows only a few miles in Louisa County before it joins the Iowa above Columbus Junction; hence

The Cedar River

virtually all bridges, dams, and ferries in this county have been located on the Iowa River. Bridges have been of two kinds — railroad bridges and wagon bridges. Since the first bridges were erected when the counties along the Cedar were sparsely settled and not too affluent, it is not surprising that the flimsy structures were washed out by the torrential floods that swept down the valley.²⁰⁷

The first bridge across the Cedar in Muscatine County was erected at Moscow in 1854 by the Mississippi and Missouri Railroad Company. This span, of unusually good construction, was not replaced by an iron railroad bridge until 1876. Thirty-six years later, in 1912, the Chicago, Rock Island and Pacific Railroad replaced this bridge with a deck plate girder type built of stone and concrete, measuring 857 feet between its abutments. There are eleven spans in this bridge, the longest of which is eighty-seven feet.²⁰⁸

The first bridge at Cedar Rapids was a toll bridge erected by David W. King in 1857. It is said that the pioneers could ford the Cedar and skip the toll "when the boulder in the river near the Watrous mill was visible". Finally, on January 23, 1853, an act was passed creating a "Board of Commissioners with authority to erect a free bridge across the Cedar River at Cedar Rapids in Linn County." The bridge was required to have a draw of not less than forty feet to permit the "free passage of boats and other craft". Completed early in 1857, this structure was swept away by a flood in the spring of that year. Similar replacements met a like fate. Since 1870, however, more permanent bridges have been built at Cedar Rapids.²⁰⁹

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In 1930 a total of fifteen railroad and highway bridges spanned the Cedar River between the city limits of Cedar Rapids and the confluence of the Cedar with the Iowa. The oldest of this group was the highway bridge at Cedar Bluff which was erected in 1876. The McKeowan Bridge in Muscatine County was built in 1879; the Saulsbury Bridge in the same county was constructed in 1880. The highway bridge at Rochester was also built in 1880. Only four of these fifteen bridges have been built since 1900 — a splendid tribute to the engineering skill of the earlier period.²¹⁰

Dams and mills became common along the Cedar after the river was declared unnavigable. Of course mills and dams had been erected on tributary streams prior to that time. The first dam across the Cedar at Moscow was built in 1866. Such towns as Cedar Rapids, Vinton, Waterloo, and Cedar Falls owed much of their growth to the splendid dam sites that were used for water power. The Federal census for 1880 listed a total of 123 water-power sites in the Cedar-Iowa basin. In 1929 there were still twelve water-power developments on the Cedar between Cedar Rapids and Ramsey, Minnesota. In addition to these there were three dams on the Little Cedar, five on the Shellrock, two on Lime Creek, and one on Indian Creek at Marion. Some dams had been abandoned, others had been washed out by torrential floods.²¹¹

Indians told the first pioneers in the Cedar Valley that "big waters" frequently filled the Cedar to its brim. The earliest flood in the experience of the white man appears to have occurred on March 11, 1840, when Theodore S.

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Parvin recorded in his meteorological table a very high stage of water. During the great flood of 1851 the citizens of Rochester erected a "high-water" monument.²¹²

In 1858 floods on the Cedar exceeded the one of 1851. Both Cedar Falls and Cedar City were inundated and buildings were swept away. A section of the Dubuque & Pacific Railroad track at Waterloo was washed out. Two weeks later a heavy storm caused the Cedar to rise even higher. Just as the people were congratulating themselves that this second flood was subsiding, a third flood occurred which damaged crops and property and paralyzed transportation and communication. At Cedar Rapids the flood of 1858 has been exceeded by only three other floods.²¹⁸

During the past eighty years the Cedar River has often overflowed. In 1880 the river rose twelve feet in twenty-six hours. Damaging floods swirled down the valley in 1881, 1884, and 1890. In 1902 a June rainstorm bordering on a cloudburst did great damage. Severe floods occurred in 1903, 1906, and 1917. The 1917 flood became particularly serious when the Waverly dam broke. At Cedar Rapids the river reached a crest stage of 17.3 feet on March 26th. This was over three feet above the fourteen-foot flood stage and caused heavy damage throughout the valley.²¹⁴

Similar floods occurred in 1929 and 1933. According to State Meteorologist Charles D. Reed, the Cedar River had never before reached the stage it did in 1929. "Floods were reported throughout its course, but the situation was the worst at Cedar Rapids and Waterloo," where the "crest stages were reported to have been the highest ever experi-

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enced at these points. The principal industrial plants were forced to suspend, business houses were flooded, and many homes abandoned. At many places power plants and water works were forced to suspend, and great inconvenience was experienced due to the lack of light and water.”²¹⁵

The flood of April, 1933, was still higher: the record at Waverly stood nine inches above the 1929 mark while Charles City recorded twenty-two inches above the high-water mark of 1929. The loss along the Iowa and Cedar rivers amounted to \$109,000, railroads alone sustaining \$37,000 in damages.²¹⁶

Losses from floods, however, seem insignificant compared with the rich resources and production of the Cedar Valley. Census figures in 1940 revealed that Cedar Rapids, Waterloo, and Mason City had enjoyed a greater increase in growth than had the first class cities in any other valley in Iowa. Cedar Rapids had gained 10.6 per cent in population between 1930 and 1940, Waterloo had increased 11.7 per cent, while Mason City had gained 16 per cent. The fertility of the soil is demonstrated by the consistently high crop yield. For example on October 1, 1940, it was estimated that Cedar County would produce fifty-six bushels of corn to the acre: only three counties in Iowa could boast of a higher yield. The average annual rainfall for the valley over a twenty-five-year period has been computed at 32.99 inches, or better than the State average.²¹⁷

THE IOWA RIVER

STALWART wanderers of prairies and forests were the Ioway Indians. They had fished in the waters of Lake Michigan, trapped game along the Minnesota and Blue Earth rivers, quarried red pipestone in southwestern Minnesota, hunted buffalo beyond the Missouri, and tarried for a while on the Nishnabotna, the Nodaway, the Chariton, the Little Platte, and the Grand. Finally, they dwelt so long on the banks of the Iowa River that their name became forever associated with that stream.

The Ioways came to the attention of the French in 1676, three years after Joliet and Marquette discovered the upper Mississippi. At that time they lived so far beyond the "People of the Sunset" that they did not visit Montreal and dance for Montcalm until 1757. Their contact with the American frontier was so slight that the first treaty between the United States and the Ioway tribe, at Portage des Sioux, was not concluded until September 16, 1815. During the years that followed, the Ioways ranged the hunting grounds between the Mississippi and Missouri, one of their favorite village sites being in the vicinity of Eldon on the Des Moines River. On October 19, 1838, thirteen Ioways signed a treaty at the Great Nemaha sub-agency on the Missouri River whereby they agreed to give up their last claims to land in what is now Iowa.²¹⁸

Whence came the word Iowa and what is its meaning?

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The word is no doubt of Indian origin, but authorities disagree as to its meaning; it has been variously translated as "Sleepy Ones", "Drowsy Ones", and "Grey Snow". Stephen R. Riggs, a noted Sioux missionary who compiled a Dakota dictionary of more than 16,000 words, defined "Iowa" as "something to write or paint with — a pen or pencil." The Ioways called themselves the Pahuchas, or Dusty Noses, from the fact that they had once settled at the mouth of a sandbar-studded river where the wind continually blew dust in their faces. This tradition might be traced to residence on the Iowa River, for Pike's map of the Mississippi showed both "Yellow Banks" (Oquawka) and a "Sand Bank" opposite the mouth of the Iowa River.

Most Iowans, however, are pleased to translate the word Iowa as meaning "Beautiful Land". This interpretation may be traced to Antoine Le Claire, who declared that Iowa meant "This is the place". He explained that a "tribe of Indians, wandering or hunting, were in search of a *home*, and when they crossed the Mississippi (not the Iowa), they reached a point they admired, and finding all they wished, they exclaimed, 'Iowa — this is the place'." Some authorities have associated this episode with the Ioway Indians, contending that when they first saw the Iowa River the Indians exclaimed "Beautiful! Beautiful!" ²¹⁹

Did the State of Iowa receive its name from the Iowa River or from the Ioway Indians? The answer is: directly from the river and indirectly from the Indians. The land west of the Mississippi and north of Missouri was first called Iowa in 1836, a year after the march of the United

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States Dragoons through the Des Moines Valley. After this expedition Lieutenant Lea prepared a map and wrote a book about the region in which he explained that "the District under review has been often called '*Scott's Purchase*,' and it is sometimes called the '*Black-Hawk Purchase*;' but from the extent and beauty of the Iowa river which runs centrally through the District, and gives character to most of it, the name of that stream being both euphonic and appropriate, has been given to the District itself." ²²⁰

Thus the Iowa District was named from the Iowa River which in turn received its name from the Ioway Indians. Two years later, in 1838, the already popular name was applied to the Territory of Iowa, being chosen in preference to such names as Washington and Jefferson. And on December 28, 1846, the same name was passed on to the State of Iowa. ²²¹

Considerable variations developed in the spelling and pronunciation of the word. Etymologically I'oway is probably correct. Lea argued for this pronunciation, the Ioway Indians pronounced it I-yu-way. The Iowa Corn Song emphasizes this pronunciation. At least five other pronunciations might be cited: Io'wah, I'ower, I'owah, I'owuh, and I'uhwuh. Weight of usage is with the I'owuh pronunciation, and the dictionary so records it. ²²²

The recorded history of the Iowa River goes back to the time when white men first set foot on Iowa soil. It was on June 25, 1673, that Joliet and Marquette visited the Illinois Indian villages near the mouth of a river which careful historians believe was the Iowa. ²²³ Many years

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were to pass, however, before the Iowa River began to appear on maps of the Mississippi Valley. William Delisle's maps of 1703 and 1718 indicated a river approximately where the Iowa enters the Mississippi, but they did not designate it as the Iowa River. Indeed, Delisle's map of 1718 named only one stream on the west bank of the Mississippi between the mouth of the Des Moines and what is now the northern boundary of Iowa. Neither did Jonathan Carver include the Iowa River on his map of 1778. By 1804, however, Samuel Lewis prepared a map which identified the Iowa River. On Sunday, August 25, 1805, Zebulon M. Pike recorded that he "stopt on the sand bank prairie" and repaired his leaking boat. Continuing on his way he "Passed the river Iowa" and "encamped at night on the prairie, marked *Grant's* [Grande or Muscatine] *prairie*." Pike's map of 1810 showed a stunted Iowa-Cedar river too insignificant to name. Arrowsmith's map of 1814, which appeared to depend upon William Clark's map of 1810, showed the "Ayauwas R." ²²⁴

When Beltrami passed up the Mississippi in 1823, he mentioned the river "Yahowas, so called from the name of the savage tribes which inhabited its banks." He did not refer to the land on the western side of the Mississippi as Iowa but rather as "*Savage Lands*". ²²⁵

On June 25, 1835, Kearny's Dragoons crossed the headwaters of the Iowa River, which Lieutenant Lea designated on his map as "Bison R. usually called Iowa". In a memoir to the War Department accompanying this map Lea reported: "we crossed a river, called by the Indians, Ioway; but as it is by far less than the other branch of that river,

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called Red Cedar; and as the name, Ioway, is irrevocably fixed on that part of the river below the junction, it is proposed to give that name to the larger branch, and to call the smaller branch Buffalo river, from the game found upon it.”²²⁶

The large number of bison roaming the prairie at the headwaters of the Iowa River might have warranted the name “Bison” or “Buffalo” for that stream. An unknown journalist in Lieutenant Lea’s company left the following account: “Marched 25 miles & encamped on the banks of the Iway a small stream 30 yards broad. This day for the first this season we saw Buffalo. Killed 5 or 6 — many of our men are recruits from the north & never saw a Buffalo before & therefore to them a Buffalo chase was something remarkable. This day was spent in eating Buffalo beef & sleep.”²²⁷

The Iowa River flows from Crystal Lake in Hancock County at an elevation of 1265 feet above sea level. For 329 miles it meanders toward the Mississippi, falling in that distance 685 feet. Since the headwaters of the Iowa River are in the Mankato drift area, which is the most recently glaciated portion of Iowa, the natural drainage is poor. The pioneers of Hancock County found the land level and marshy. Both the east and west branches meandered from one slough to another, their general courses being determined by the topography of the moraine through which they passed. Though the swamps have since been drained by tile, the streams in the area show little evidence of erosion. As a matter of fact they are virtually drainage ditches, the west fork actually being dredged to carry the

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scanty flow from Crystal and Eagle lakes. The approximate width of the normal channel of the west fork during the course of its 32.2-mile journey to the southern boundary of Hancock County is only five feet.

From the junction of its upper branches about a mile above Belmond, the Iowa River is no longer a drainage ditch as it meanders for forty miles through Wright and Franklin counties. Pursuing a southeasterly course through the flat prairie of the Mankato drift, the stream falls only 1.5 feet per mile, resulting in a velocity insufficient to cut deeply into the mantle of thick glacial drift. When it reaches Alden in Hardin County, the sluggish Iowa enters a circuitous rock gorge which continues for forty miles through Iowa Falls, Steamboat Rock, Eldora, Secor, and Gifford. Its fall through this stretch is 4.2 feet per mile, the descent being steeper through the limestone walls around Iowa Falls than it is along the sandstone bluffs of the Eldora region.

After the river leaves Hardin County the valley gradually widens, showing evidence of greater maturity as the Iowa courses through a terraced valley 4000 to 8000 feet in width skirting the edge of the Iowan drift area. Its fall through Marshall and Tama counties (across the wooded Tama Indian reservation and the lowlands of the Chelsea melon country) is a scant two feet per mile while the approximate width of its channel is between 150 feet and 175 feet. Meandering eastward past the Amana colonies the Iowa enters a gorge, near Curtis Bridge, which continues for several miles. At Iowa City it nods in tribute to the Old Stone Capitol. Just before leaving Johnson Coun-

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ty the river flows noisily over Buttermilk Falls and soon joins the Cedar River above Columbus Junction. From that point to the Mississippi the combined streams form a snag-infested channel approximately 800 feet in width, strewn with willow-covered islands.²²⁸

By the terms of the treaty of September 21, 1832, an oblong tract of land embracing 400 square miles along both banks of the lower Iowa River was reserved for Chief Keokuk and his followers as a reward for refusing to join Black Hawk in his futile war. On this reserve at the beginning of settlement were located the principal villages of the Sauk and Fox Indians, whence such powerful chiefs as Keokuk, Wapello, Poweshiek, and Appanoose led their braves up the valley on hunting expeditions. In 1836, however, this tract was ceded to the government and the Indians moved their wickiups to new village sites on the Des Moines River.²²⁹

The departure of the Sauk and Fox Indians was the signal for the beginnings of white settlement in the valley of the Iowa River. "Twelve months ago," declared the *Iowa News* of June 10, 1837, "there were not more than twelve voters in the county of Louisa, and last April, there were over two hundred. The Iowa river runs through this country, which extends 24 miles on the Mississippi, running back 40 miles. The settlements, however, do not extend back beyond 24 miles."

By 1838 the population of Louisa County was found to be 1130 and in 1840 it totaled 1925. John B. Newhall was impressed with Wapello, the "handsomely located" seat of justice which almost overnight had "metamor-

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phosed" from an Indian village into "streets, squares, neat dwellings, the courthouse, and the commodious taverns." Black Hawk, Florence, Columbus City, Harrison, and Fredonia were other "thriving villages" in Louisa County which had sprung up along the Iowa River. The country above Wapello was being rapidly settled "by an industrious, farming population".²⁸⁰

One of the most pressing needs of the early settlers in the Iowa Valley was transportation facilities. The river seemed to provide the best prospect. In the fall of 1837 the steamboat *Science*, with Captain S. B. Clark in command, ascended the Iowa River during a low stage of water as far as Wapello. This was the first craft to turn a wheel on that stream. Those aboard claimed that the Iowa River was navigable to the "town of Cattese" at the mouth of the Cedar River, and could be "rendered easy of navigation" for light-draft boats at all seasons of the year.²⁸¹

In the following years the mushroom settlements along the Iowa River welcomed other steamboats. Early in May, 1838, the *Pavilion* with more than fifty passengers aboard, William Phelps commanding, performed the experiment of ascending the Iowa River to present-day Columbus Junction. When the Reverend James L. Scott visited the junction of the Cedar and Iowa rivers in 1841 he declared that the towns around this "Garden of the West" would eventually "take the lead in commerce" over the newly laid out capital at Iowa City situated farther upstream. Settlers around Columbus Junction assured Scott that only keel-boats would be able to navigate the Iowa to Iowa City. This erroneous assumption was dispelled that very year.²⁸²

The Iowa River

Almost from the day when the site for the new capital of the Territory of Iowa was selected in 1839, the pioneers of Iowa City had wondered if a steamboat might some day navigate the river to that point. Lieutenant Albert M. Lea had given some encouragement to such hopes as early as 1836. "The current", he observed, "is rapid; sand-bars and snags are frequent; and the channel often changes position. In these respects, it is said much to resemble the Missouri river. It is believed that the main river can be easily navigated, during three or four months of the year, by steamboats of light draught, as far up as some rapids near Poiskeik's [Poweshiek's] village, a distance of 100 miles."²⁸³

The great day for Iowa City occurred on June 20, 1841, with the "Arrival Extraordinary" of the steamboat *Ripple* at the ferry landing which was promptly renamed "*The Steam Boat Landing*". Captain D. Jones was in command of the gallant little *Ripple*, which numbered John B. Newhall among her passengers. According to an Iowa City editor, "There were no impediments found to an easy and safe navigation of the river, if we may except a few snags and projecting trees, a few miles below the city, which will be removed by our citizens during the present week. . . . we now have the fact proved, beyond the possibility of a doubt, that the Iowa river is navigable beyond this place for seven months at least during every year."²⁸⁴

On the following day the captain and crew of the *Ripple* were banqueted at the National Hotel. John B. Newhall and his fellow passengers were invited as guests, the former delivering the principal address in honor of an event which made the capital of the Territory "no longer

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dependent on the towns on the Mississippi". A toast was drunk both to the *Ripple* and to her "enterprising commander", who promised to return to "this beautiful little queen of Iowa". But, alas, the *Ripple* was destined never to come back to Iowa City. Her captain joined the Mormon migration and died somewhere in the West.²⁸⁵

Ultimately a number of other steamboats churned the waters of the Iowa River. On April 21, 1842, the *Rock River* came "booming" up to the Iowa City landing under the command of Captain Thayer. Shortly after her arrival the *Rock River* made an excursion about twelve miles up the Iowa River to the stone quarries. One hundred and fifty excursionists, forty of whom were ladies "dressed in splendid attire", made the trip. Those aboard reported that they saw workmen quarrying the "very best quality" of stone for the Capitol at Iowa City. Again in April, 1842, the *Rock River* came up to Iowa City with a cargo of freight and passengers, making the trip from Bloomington in one day.²⁸⁶

Two years passed before Iowa City greeted the *Agatha*, the third steamboat to make that port. Built at Pittsburgh in 1842, the *Agatha* was a sixty-four ton stern-wheeler, measuring 119 feet in length, 19 feet in beam, and three feet in depth of hold. She was owned by Captain James Lafferty and George Collier of St. Louis. The *Agatha* brought a considerable amount of freight to Iowa City on March 12, 1844, and returned downstream with a cargo of "Pork, Hemp, Wheat, &c., &c., besides some fifteen or twenty passengers to St. Louis." It is said more freight would have been offered had it not previously been "wag-

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goned" to Bloomington (Muscatine). "We hope, hereafter," concluded a local editor, "our merchants will act in concert and hold out inducements for steam boats to ascend the Iowa. Freights, by way of the Iowa river, would be at least one half less, than by way of Bloomington." ²⁸⁷

Although the *Agatha* failed to return to Iowa City, two other steamboats braved the waters of the Iowa River in 1844. The *Maid of Iowa* arrived on June 2nd in command of Captain Daniel Repshell. She departed downstream with a large cargo of corn, a thousand bushels of which were lost when a keelboat that the steamboat was towing apparently struck a snag and broke in two. The *Maid of Iowa* appeared again in July and in September, after which she failed to return. This non-appearance was explained in an announcement in the *Iowa City Standard* of September 26, 1844, that the *Maid of Iowa* had been tied up at St. Louis by the sheriff while passengers and freight waited in vain. ²⁸⁸

On June 22, 1844, the steamboat *Emma* "very unexpectedly hove in sight" with a heavy cargo. The *Emma* was said to be the "largest craft" ever to visit Iowa City, her gross displacement being 170 tons. "We are informed", a local editor reported, "that she did not experience the least difficulty in either ascending or descending the river. The time is not far distant when our flourishing young City will be the shipping mart for a large district of country around it." ²⁸⁹

On March 18, 1846, the *Reveille* was announced as the "regular semi-weekly Packet" from Burlington to Iowa City. The *Badger State* was advertised in 1854 as a

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"staunch steamer" that had been "thoroughly overhauled and refitted expressly to run in the Iowa River". Indeed, a few boats were built on the Iowa. The last of these was the *Iowa City*, launched at Iowa City in 1866. Less than a dozen steamboats are known to have plied the Iowa River over the sixty-six miles of its course between Iowa City and the Mississippi River. Neither in the number of craft employed nor in the distance the steamboats traveled does the Iowa River compare with the Cedar in the development of water transportation.²⁴⁰

Ferries were established at various points along the Iowa River. The first of these crossings were naturally located on the lower Iowa, serving as a barometer of the movement of settlers upstream. The legislatures of the Territory of Michigan, the Territory of Wisconsin, and the Territory of Iowa passed specific as well as general laws regulating the operation of ferries and also authorized the district court to grant ferry licenses. Under this grant of authority a number of ferry licenses were issued in April, 1837, when court was held at Wapello.²⁴¹

Probably the first ferry at Iowa City was operated by Benjamin Miller without a license during the winter of 1838-1839. It was not until March 6, 1840, that the Johnson County commissioners granted William Sturgis and Luke Douglass the right to operate a ferry at the newly-surveyed Territorial capital. The license fee was five dollars and the tolls fixed by the commissioners were: for a footman, 12½ cents; for one horse and wagon, 37½ cents; for a yoke of oxen and wagon, 50 cents; for one span of horses, 50 cents; for each horse and man, 25 cents; for each

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additional horse or yoke of oxen, 12½ cents; for each head of neat cattle in droves, 6½ cents; and for sheep and hogs per head, 3 cents.²⁴²

Although bridges gradually supplanted the ferries across the Iowa River, their construction was at first deferred along the lower reaches because they might obstruct the passage of steamboats. With the coming of the railroads, however, the streams had to be bridged. The track of the Mississippi and Missouri (Rock Island) Railroad was completed to Iowa City on January 1, 1856; Chelsea and Tama were reached in 1861; Marshalltown greeted the iron horse in 1862; Iowa Falls was linked with Dubuque by the Illinois Central early in 1866.²⁴³

With so much railroad construction during the decade from 1855 to 1865 it is not surprising that the State legislature should adopt a resolution in 1868 asking Congress to declare the Iowa River north of the city of Wapello "not navigable". This action was prompted by "various petitions of citizens of Louisa county" who contended that "if parties were allowed to bridge or throw dams across said river, the community would receive much more benefit by reason of such improvements than they now do". On May 6, 1870, an act of Congress was approved declaring the Iowa River unnavigable above Wapello, and the first bridge spanning the river at that point was completed by 1874.

Since Iowa City had always been considered the head of navigation, Gilman Folsom had been granted a bridge license as early as May 2, 1853. Such towns as Marengo, Marshalltown, Eldora, and Iowa Falls built bridges as soon as private or public capital was available.²⁴⁴

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In 1930 the United States Army Engineers counted eighteen bridges across the Iowa River between the Mississippi and the dam at Iowa City, or an average of one every three and one-half miles. The oldest of these structures, built in 1877, was the highway bridge on Primary No. 2 east of Columbus Junction; the newest was erected in 1911 on the township road on the line between Louisa and Johnson counties.²⁴⁵

The Iowa River has, of course, experienced periodical floods, although they have not been as frequent or as disastrous as those on the Cedar. This is due mainly to the narrow basin of the Iowa as compared with that of the Cedar.

Rainfall in the Iowa Valley is fairly uniform: during recent years every summer month between May and September has recorded at least ten inches. Although more than ten inches of rain within twenty-four hours has been officially measured in eight places in Iowa, the highest ever recorded in the basin of the Iowa River is only 7.78 inches. The maximum floods at Iowa City have been caused by early summer rains centered in the Marshalltown area. The minimum volume of flow at Iowa City is approximately twenty-five cubic feet per second while the maximum recorded flood flow is 36,200 cubic feet per second, or 1400 times the minimum. By way of contrast, at Cedar Rapids on the Cedar the water-flow figures range from 140 to 72,000 cubic feet per second, which may be more readily understood when it is remembered that the annual precipitation in the Cedar basin ranges from eighteen inches to fifty-eight inches.²⁴⁶

The Iowa River

The Iowa River has been swollen by devastating floods in 1851, 1881, 1903, 1912, 1915, and 1918, but damage has usually been confined to the bottom lands and to such urban communities as Marshalltown and Iowa City. The 1918 flood was exceeded in historic times only by those of 1851 and 1881. "The flood discharge was greatest at Marshalltown, where it reached a peak of 42,000 cubic feet per second on June 4. As the flood waters spread over the broad bottom lands below this point the crest discharge decreased in spite of contributions from other tributaries, 38,600 cubic feet per second being measured at Belle Plaine on June 5, and 36,200 cubic feet per second when the crest reached Iowa City on June 7." Madison Street, where the Memorial Union is located, was flooded.²⁴⁷

The history of the valley of the Iowa River is replete with colorful episodes. In his village near the mouth of the Iowa, the eloquent Keokuk vanquished Black Hawk in exhortation and restrained his followers from entering the Black Hawk War.²⁴⁸ In the Old Stone Capitol at Iowa City, three Constitutional Conventions were held, the State University of Iowa and the State Historical Society of Iowa were born, and the Republican party of Iowa was organized.²⁴⁹ In Iowa County may be found the seven quaint villages of the Amana Society. The distinguished Metropolitan Opera baritone, Clarence Whitehill, was born at Marengo in 1871. In Tama County, the Meskwaki Indians set up their wickiups in 1856 and still dwell in their favorite haunts along the river. Marshalltown was the home of Adrian C. (Pop) Anson, who became the manager of the Chicago White Stockings in 1876. Along the

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banks of the Iowa below Eldora a few flecks of gold were discovered by John Ellsworth in 1853, and two or three thousand gold miners swarmed into that region.²⁵⁰ The rough timberland between Iowa Falls and Steamboat Rock was a favorite refuge for horse thieves and counterfeiters. As early as July 4, 1857, the Hardin County Mutual Protection Society was formed to rid the country of these desperadoes, but the climax of outlawry occurred in 1885 when two men were lynched at Eldora.²⁵¹

The valley of the Iowa is a land of natural beauty and fertility. To the banks of this stream came Enoch W. Eastman in 1857 to cast his lot with the pioneers of Hardin County. Born and reared in New Hampshire, he had migrated to Iowa where the spirit of the people as well as the promise of the land appealed to him. The inscription on the Iowa block in the Washington Monument, proposed by Enoch W. Eastman, was accepted as a motto which the whole State could affirm — "Iowa: the affections of her people, like the rivers of her borders, flow to an inseparable Union."²⁵² So, too, does the Iowa River flow to its union with the Cedar, and thence the Iowa-Cedar continues till it joins the mighty Father of Waters.

THE SKUNK RIVER

THOUSANDS of land-hungry settlers streamed across the Mississippi into Iowa. "Here we behold the emigrant crossing the majestic river with the Bible, the axe, and the plough — emblems of peace, prosperity and power", observed J. B. Newhall on the Fourth of July of 1846. "You may point me to Caesar, to the armies of Alexander and Napoleon, triumphant with the laurels of victory; yet history never presented a spectacle half so sublime as the long train of moving emigrants, going forth to consecrate the pathless prairie to freedom and a lofty civilization." ²⁵³ On December 28th of that year Iowa was admitted into the Union.

Statehood lured an ever-increasing horde of emigrants to the Hawkeye State. Not a few of these were foreigners. On July 29, 1847, Henry P. Scholte and a committee of Hollanders started across the prairies from Fairfield to buy land in northeastern Marion County. Having acquired some rich holdings in the Skunk Valley, the Dutch immigrants also secured extensive tracts farther south in order to have access to the Des Moines River. On the ridge between the two valleys they laid out the town of Pella, designed to be the center of their colony in the New World. "Imagine", a Dutch historian wrote, "a number of bakers, tailors and shoemakers, painters, office-clerks, business managers and such like, who had all their lives been

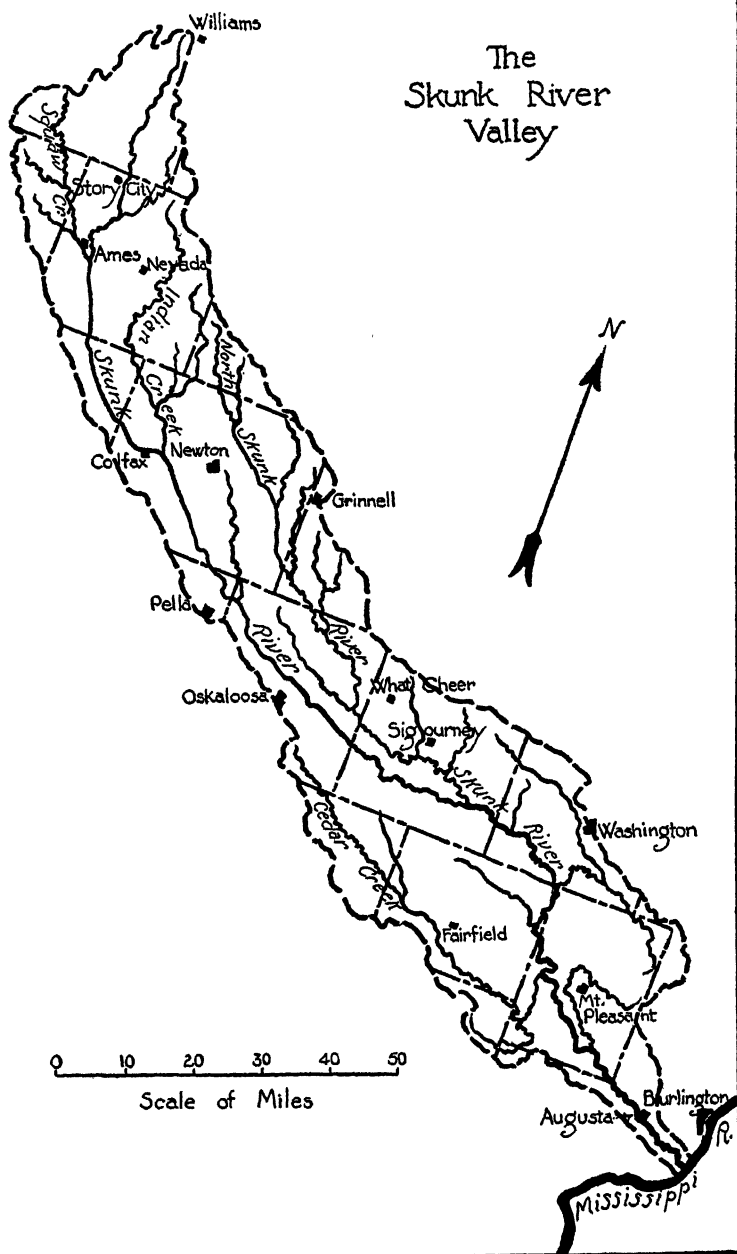
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used to the city life of Europe — some of whom hardly knew what a cow or a pig looked like, nor had the slightest knowledge of farm implements; who had left neat and comfortable homes and had never known or seen others — imagine such people suddenly transplanted to an open prairie, with here and there some timber, seeing nothing but grass, trees and sky, and finding no protection against the elements!”²⁵⁴

Despite tremendous odds the Dutch prospered. Ten years later Nathan H. Parker found Pella a “thrifty, active, business” town of about 1500 inhabitants, most of whom were Hollanders. “They are a steady, industrious, honest class of people, and brought considerable wealth with them.” Two steam sawmills, an oil mill, a sash and door factory, a plow factory, a patent brick plant, and a carding machine were under construction. Mechanics and builders were in demand at Pella and manufacturers and capitalists were also needed. One Dutch and two American schools were already in successful operation, and a college was being erected by the “Missionary Baptists”.²⁵⁵

As the years passed the same scenes were enacted throughout the valley of the Skunk River by hardy Americans and picturesque foreigners. The pioneers of 1840 could scarcely have dreamed of the changes a century would bring. Although no cities had grown to first class size by 1940, some of the most attractive towns in the State were located in the area drained by the Skunk River. Ames is the metropolis of the valley according to the most recent census (1940), having a population of 12,555 which represented an increase of 22.1 per cent over the 1930 census

The Skunk River Valley



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figure. Of all cities in Iowa with populations over 10,000, Ames is the fastest growing. Oskaloosa and Newton stood close behind Ames in 1940 with populations reckoned at 11,024 and 10,462 respectively. Grinnell, Fairfield, Washington, Mount Pleasant, Nevada, Colfax, Baxter, Pella, and Sigourney — these were but a few of the cities that helped swell the total number of inhabitants in the valley to 174,000 in 1925, 44 per cent of whom lived in incorporated cities or towns. Since the average density of population was 40.2 persons per square mile, the Skunk Valley almost equalled the average for the State in this respect.²⁵⁶

Whence came such a repellent name for a river so attractive? Two theories have been advanced concerning its origin. One contends that it is derived from the Algonquin word *checauque*, meaning a rank, offensive odor, as of onions.²⁵⁷ The other theory is that the river was named from the large number of skunks living along its banks. An examination of the history of the name as it applies to the river appears to indicate the latter.²⁵⁸

Although the Skunk River is much larger than the Upper Iowa, the Turkey, the Maquoketa, and the Wapsipinicon, it was not identified as early as any of these streams. Even Zebulon M. Pike failed to record the Skunk River. By 1810, however, William Clark referred to it on his map as the "Polecat R." Arrowsmith also called it the "Polecat" on his map of 1814. When the steamboat *Virginia* churned by in 1823, G. C. Beltrami noted the "*Bête Puante*" (Stinking Beast) flowing into the Mississippi a short distance above Fort Madison.²⁵⁹

With the beginnings of settlement in 1833 the river

The Skunk River

came more and more to the attention of the white man. Thus, Albert M. Lea called it the "Chacagua or Skunk River" on his map of 1836. Dr. Isaac Galland's *Iowa Emigrant* mentioned the "Shecaqua" or Skunk River in 1840, though on the map accompanying Galland's guide book the stream was simply labeled Skunk River. Polecat, *Bête Puante*, *Chacagua*, or *Shekagua* — whatever the origin of the name, its meaning was not left in doubt by early travelers and settlers.²⁸⁰

When Stephen W. Kearny set out with his United States Dragoons in the summer of 1835 he followed the ridge between the Skunk and Des Moines rivers. On his map of Wisconsin Territory, Lieutenant Albert M. Lea indicated the day-by-day progress of the expedition. The dragoons apparently skirted the headwaters of the "Chacagua or Skunk River" on June 24th near "Hahawa" or Swan Lake. In the first detailed account of the stream, Lea wrote: "Chacagua River is generally swift in current, rises and falls rapidly, seldom overflows the alluvial lands along its borders, and furnishes much excellent timber. There are many fine springs along its bluffs, and along the tributary creeks: and the whole body of its soil may be said to be of excellent quality."

Lieutenant Lea was uncertain about the possibilities of developing the stream as a highway of commerce. "A small keel-boat", he asserted, "has frequently ascended it, even at low water, a distance of 60 miles; and it is probable that it may be navigated much further. Steamboats have not yet been upon it; but there appears to be no reason that they should not perform upon it to advantage." Un-

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fortunately for those interested in its navigation, the swift-flowing Skunk River was soon harnessed for water power. "A large mill, both for sawing and grinding", Lea observed, "has been established about 10 miles above the mouth. To effect this, a dam has been thrown across the river; thus creating an obstruction to navigation, which must be abated as soon as the settlements above shall call for it. There are also a few snags in the mouth of the river, which will require removal." ²⁶¹

Curiously, so far as is known, the waters of the Skunk River were destined to be churned but once by a steamboat — the redoubtable *Maid of Iowa*. Built at Augusta on the banks of the Skunk River by Levi Moffatt and Captain D. Jones, the *Maid of Iowa* was launched on July 27, 1842. She was the first steamboat known to have been constructed in Iowa. Her enterprising designers had probably purchased her boilers and machinery at St. Louis or some Ohio River port. ²⁶²

The story of the *Maid of Iowa* is one of the most colorful in upper Mississippi steamboat annals. In the records of the Collector of Customs at St. Louis a fading entry dated May 2, 1844, reveals that the *Maid of Iowa* was 115 feet long, 18 feet, 4 inches breadth of beam, 3 feet depth of hold, and measured 60 70/95 tons. She had a transom stern, a cabin above deck, and a plain figure. Her captain, Daniel M. Repshell, declared under oath that "Joseph Smith of Nauvoo, Illinois, in trust for the Church of Jesus Christ of Latter Day Saints" was sole owner of the *Maid of Iowa*. ²⁶³ And so it appears that the first steamboat built in Iowa belonged to the great Mormon prophet.

The Skunk River

But this is not all! A month after she was enrolled at St. Louis the *Maid of Iowa* ascended the Iowa River to Iowa City, the fourth boat to reach that port. The gallant little craft also churned the waters of the Cedar that year. In 1845, after having navigated the principal rivers in eastern Iowa, the *Maid of Iowa* ascended the Wisconsin River to Point Boss, fully 130 miles above Fort Winnebago, which was alleged to be 100 miles farther than any other steamboat had gone. The sturdy little craft was navigating the Des Moines River as late as 1851 but her final disposition is unknown.²⁶⁴

Because of the comparatively narrow basin of the Skunk River, many early settlers relied upon Des Moines River transportation facilities. Thus, after locating their colony in northeastern Marion County the Dutch actually built a port on the Des Moines River and named it New Amsterdam. Most of the pioneers, however, depended on the rumbling stagecoach and the heavy wagon for cross-country traffic. Before the outbreak of the Civil War the Burlington, the Rock Island, and the North Western railroads had given the Skunk Valley settlers fairly easy access to eastern markets.²⁶⁵

Although the Skunk River is only 264 miles long compared with the 329-mile length of the Iowa River, its basin is almost as large as that of the Iowa. The Skunk drains an area of 4325 square miles, the fourth largest watershed of the Iowa rivers which empty into the Mississippi. Embracing 7.7 per cent of the total area of the State, the Skunk Valley eclipses the basin of the Little Sioux which is the largest tributary of the Missouri River in Iowa. In

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point of size the Skunk River is one of Iowa's most important streams.²⁶⁶

The Skunk River rises in the Mankato drift region in northeastern Hamilton County. From an elevation of 1200 feet above sea level in Williams Township, the stream flows southward midway between the towns of Williams and Blairsburg and just misses the towns of Ellsworth and Randall as it glides for 30.7 miles through Hamilton County. Ditches have been dug throughout this area to assist in the drainage of this morainic countryside. Cairo and Wall lakes, two shallow, marshy pools near the headwaters of the Skunk, have been reclaimed as dry land in this manner.²⁶⁷

After it enters Story County the Skunk follows a comparatively narrow valley which in places contracts to a gorge where sandstone, shale, and St. Louis limestone are exposed to view. Much of the stream has been straightened in both Story and Polk counties. Continuing through Jasper County in a channel straightened by engineers, the river cuts directly across a narrow belt of Red Rock sandstone near Reasnor. The channel has also been artificially straightened through two-thirds of Mahaska County. Thereafter the Skunk follows a serpentine course in a southeasterly direction through Keokuk, Washington, Jefferson, and Henry counties. It forms the boundary line between Lee and Des Moines counties for a score of miles before entering the Mississippi about nine miles below Burlington. The Skunk River falls a total of 680 feet in its 264-mile journey, draining all or a part of twenty Iowa counties.

The Skunk River

The basin of the Skunk River is long and narrow, nowhere exceeding forty miles in width. The largest tributary is the North Skunk, a stream which rises on the western border of Marshall County at an elevation of 1050 feet. The North Skunk joins the main stream in Keokuk County, 93.1 miles above the junction of the Skunk with the Mississippi. It is 114 miles long and drains an area of 860 square miles. This is 215 square miles greater than the total area drained by the English River which is the largest tributary of the Iowa River.

Cedar Creek is next in importance as a tributary. It rises at an elevation of 825 feet in southeastern Mahaska County and flows for seventy-six miles in a southeasterly direction to its junction with the Skunk River just below Rome. Cedar Creek has a basin of 560 square miles, almost equal to that of the North Fork of the Maquoketa. Squaw Creek, Bear Creek, Clear Creek, Sugar Creek, Indian Creek, Buck Creek, Church Creek, and Walnut Creek are among the many small streams that help drain the Skunk River watershed.²⁶⁸

The problem of fording the numerous Iowa streams was a challenge to all early settlers who endeavored to cross the Hawkeye State. The covered-wagon pioneers especially dreaded the Skunk River bottoms whose "deep and porous" soil presented a quagmire each spring. These boggy mud-holes were "known and dreaded" by travelers from "Maine to California". Emigrants considered themselves lucky if they escaped without being "pulled out at least three or more times". So famous were the Skunk River bottoms about Civil War days that *Harper's Weekly* contained an

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illustration depicting the crossing of the "Skunk Bottoms". The picture showed a stagecoach bogged down in the mud, the passengers waiting patiently for a pioneer farmer who is seen approaching in the distance with a yoke of oxen to help the weary horses pull the coach to firmer ground. Story County pioneers told many tales of the "awfull" difficulties experienced in crossing the Skunk River.²⁶⁹

Perhaps the most remarkable feature of the Skunk Valley is the large number of institutions of higher learning located there. At Mount Pleasant in 1842 the Methodists established Iowa Wesleyan, the oldest college in the State. Iowa State College, one of the most important agricultural schools in the United States, was founded at Ames in 1868. Scattered along the valley between these two institutions are Parsons College at Fairfield, Penn College at Oskaloosa, John Fletcher College at University Park, Central College at Pella, and Grinnell College at Grinnell. No other river valley in Iowa can equal the Skunk in the number of such institutions.

Was it merely an accident that one-fourth of the Iowa colleges functioning in 1940 were located in a valley constituting only 7.7 per cent of the area of the State? Perhaps a partial explanation can be found in Horace Greeley's advice to Josiah Bushnell Grinnell: "Go West, young man, go West. There is health in the country, and room away from our crowds of idlers and imbeciles." In 1854 Grinnell came west and founded the town of Grinnell on the high ridge overlooking the Skunk River Valley. There Grinnell College was established in 1855 — a notable institution boasting such alumni as Albert Shaw, Gardner Cowles,

The Skunk River

Major General Charles McKinley Saltzman, James Norman Hall, Ruth Suckow, Harry Hopkins, and Gary Cooper. Iowans like to think that Horace Greeley meant Iowa; residents of the Skunk Valley may be pardoned if they believe he meant their own fertile region.²⁷⁰

Many notable events have occurred in the Skunk Valley. The first State Fair was held at Fairfield in 1854.²⁷¹ The Tally War occurred near South English in 1863 as southern sympathizers gathered to avenge the murder of a Baptist preacher named Tally. Only the prompt action of Governor Samuel J. Kirkwood averted a catastrophe.²⁷² At Iowa Wesleyan College the P. E. O. Sisterhood was organized in 1869.²⁷³ Billy Sunday was born near Nevada and James Norman Hall first saw the light of day at Colfax.²⁷⁴

From sturdy Welshmen who worked the mines around Oskaloosa have sprung some of the finest musicians in the country. Who has not heard of Oskaloosa-born Frederic Knight Logan, composer of the "Missouri Waltz" and "Pale Moon"; or of Thurlow Lieurance and his immortal "By the Waters of Minnetonka". The names of June Adele Skelton, Homer Samuels, Charles L. Griffith, and Samuel H. M. Byers are also associated with the Oskaloosa scene.²⁷⁵

In the Skunk Valley one may find a sturdy population of native Americans and citizens of foreign descent — German, English, Scotch, Welsh, Dutch, and Swedes, to mention a few. Quakers and Mennonites may be found worshipping in the same communities with the Roman Catholic, the Protestant, and the Jew. All are doing their share toward the development of Iowa. Newton leads the

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world in the production of washing machines; Oskaloosa manufactures washing machines and has in addition a number of creameries and poultry-packing plants. Ames has a canning factory, a pottery works, a hatchery, and a garden-tool factory. Fairfield produces washers, malleable iron, gloves and mittens, wagons, glass, brushes, and electric wood-working machines. Even the smaller communities have their industries: Kellogg relies for much of its income on the Midwest Metal Stamping Factory, while little What Cheer has its Bruce Goldfish Hatchery. At the mouth of the Skunk River near Augusta the Federal government is erecting an immense powder plant.²⁷⁶

Although the Skunk Valley contains coal and clay, it is particularly noted for agricultural production, 95 per cent of the land being used for farms. Corn and oats are the principal crops but a considerable amount of hay is grown. Residents of the Skunk Valley may rejoice in the fertility of the soil as well as in cultural achievements. The narrow basin is not subject to devastating floods and no cities are imperiled by high water. Furthermore, the amount of silt carried down the Skunk River does not approximate that transported by the erosive Des Moines.²⁷⁷

DEVILS CREEK

"DISASTROUS Flood in Lee County", announced the Fort Madison *Democrat* in bold headlines on June 10, 1905. The citizens of that thriving Iowa town scarcely needed to be reminded of their plight for Fort Madison as well as Lee County had been caught in the maelstrom of one of the worst floods in Iowa history. Lines of communication were paralyzed, bridges washed out, crops and property destroyed, sewers burst open, and lives endangered. "Fort Madison is today virtually off the map," the *Democrat* mourned, "there being no communication by railroad, telegraph or telephone with the outside world."

The evening before, on June 9, 1905, residents of Fort Madison had joyously hailed the "refreshing showers" that betokened good crops for the farmers. But about ten o'clock rain began to fall heavily, increased in violence until the middle of the night, and continued almost ceaselessly until eight o'clock Saturday morning. A total of 6.40 inches of rainfall was reported by the local weather bureau for June 10th. "The big Mississippi river made one of the most spectacular rises ever known here," the *Democrat* reported. "Friday night the gauge on the Santa Fe bridge marked eight feet. This morning at 6 o'clock it marked eleven feet, a rise of three feet during the night." The rise of the Mississippi at Keokuk was even more spectacular; in nineteen hours the river rose from 10.4 feet to

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18.4 feet, or within three feet of the high-water mark of 1851.²⁷⁸

There was ample reason for this sudden rise in the Father of Waters. The area from Des Moines on the west to Peoria on the east, and from Davenport on the north to Quincy on the south had just experienced one of the heaviest downpours of rain ever recorded during a twenty-four hour period in the northern half of the United States. The center of the storm was at Bonaparte, Iowa, and La Harpe, Illinois, where the rainfall has not been equalled before or since in the northern States.²⁷⁹

The "torrential" rain that fell in the lower Des Moines Valley was described as "phenomenal and record-breaking" by government observers. Bonaparte had been drenched with 12.10 inches of rain in twelve hours, Keosauqua recorded 11.09 inches, while at Stockport the fall measured 10.63 inches. "Not many buildings", the United States Weather Bureau recorded, "were sufficiently well roofed to keep the occupants dry, and but few streams and water courses were adequate to carry off the surplus moisture. Those who were driven out into the wet say it came down in sheets and hit so hard it was difficult to stand though there was no wind." A Van Buren County reporter declared that eighty-five county bridges were swept away. The Keosauqua *Republican* reported that "Van Buren county beat the record by pulling more water from the clouds in the same length of time than was ever done by any county in Iowa."

Outlying areas underwent similar although less torrential downpours: Mt. Pleasant recorded 7.20 inches of rain;

Devils Creek

Burlington, 6.10; Davenport, 5.67; Iowa City, 4.87; Keokuk, 4.80; and Chariton, 4.22. A government observer declared that the "aggregate damage to crops by erosion of soil on the slopes, and flooding the bottoms was altogether beyond estimation in all the area swept over by that unprecedented storm. Happily such storms are not usual visitations." ²⁸⁰

Although the Mississippi, the Des Moines, the Skunk, and other streams were transformed into mill-races over night, it was twenty-one-mile-long Devils Creek in Lee County that was converted into a raging torrent of unparalleled fury. The fan-shaped basin of this diminutive stream drains 145 square miles of land in north-central Lee County. Devils Creek, fed by numerous tributaries, empties into the Mississippi four miles below Fort Madison. Its two lower branches, Panther Creek and Little Devils Creek, drain areas of fourteen square miles and nineteen square miles respectively, and empty into Devils Creek within a half mile of each other and only about three miles above its confluence with the Mississippi. The Santa Fe railroad crosses Devils Creek below the junction of these two tributaries with Devils Creek. The Burlington track runs west to Viele before turning abruptly south to St. Louis and consequently crosses all three streams above their common junction. ²⁸¹

Fortunately the rolling country in the basin of Devils Creek was sparsely populated. There were no towns along the stream or in the valley itself. Donnellson at the headwaters of Panther Creek is on the west rim of the watershed separating Devils Creek from Sugar Creek. West

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Point lies far up the slope of the eastern watershed. The most populous area in the valley was Franklin, a village of 210 inhabitants on the divide between Devils Creek and Little Creek. Laid out to be the county seat of Lee County in 1840, Franklin lost the election and did not develop as planned. By 1930 the population was only ninety-two. The most perilous position, therefore, was occupied by the railroads entering Fort Madison along the lowlands near the mouth of Devils Creek. When the surging waters converged in this area on that fateful June night in 1905, stark disaster resulted.²⁸²

Fully ten inches of rain fell on the headwaters of Devils Creek. This cloudburst, which caused the Des Moines River to rise nineteen feet at Keosauqua, shot Devils Creek and all its tributaries out of their banks as the waters rushed madly toward the Mississippi. According to the *Fort Madison Democrat*, "Devils creek was on a rampage, and raised hades to its heart's content, there being few bridges left along its length for many miles. The bridge on the middle road from Fort Madison to West Point at Four Mile Hill is washed out, as is also the Pitman creek bridge near West Point. The railroad and wagon bridges over Devil Creek in Jefferson township are either out or rendered unsafe."

Individual losses to farmers were very heavy. Henry F. Eppers, a farmer who lived south of Viele near Devils Creek, suffered severely from the deluge. "The water rushed over his barn lot in torrents", declared the *Fort Madison Democrat*. "Three cows, two calves, a horse, some 500 chickens, a bunch of hogs and a bin containing 500 bushels of oats were carried away, and 1000 bushels of corn

Devils Creek

in cribs was water soaked." One farmer located in the path of the flood testified that Devils Creek had risen "six feet higher than ever before known." Another asserted that the water rose eight feet higher than any previous stage. The water in Fred Gulleck's home, which stood on the left bank of Devils Creek just above the Burlington bridge, rose 49.5 inches above the house floor. It dropped rapidly when the bridge went out.

Railroad property sustained staggering losses. The Santa Fe track east and west of Fort Madison was washed out. The damage around the Devils Creek bridge was particularly heavy. East of Fort Madison the Burlington railroad suffered the "heaviest landslides ever known", while the bridge washouts on Devils Creek and below Montrose prevented north-bound trains from reaching Fort Madison. The Ottumwa branch of the Burlington, which followed the northeastern rim of the Devils Creek basin through Sawyer and West Point, was paralyzed by track and bridge washouts. Stranded passengers at Fort Madison, including ex-Congressman Martin J. Wade of Iowa City, had to take the steamboat *Eloise* in order to reach Burlington.

Two engineers who made a survey of the flood fourteen days later declared the damage done was "very large considering the small area covered by the storm." In addition to the railroad losses, they found fourteen "county bridges over Devils Creek in Lee County, varying in length from 70 to 127 feet; 6 bridges over the branches of Devils Creek, of lengths ranging from 30 to 156 feet; 4 bridges over Little Devils Creek, of lengths ranging from 110 to 136

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feet; and 3 bridges over Panther Creek, of lengths ranging from 90 to 156 feet, were either swept away or damaged. The cost of replacing these county bridges was estimated at \$27,000 by M. E. Bannon, bridge engineer, Lee County, Iowa." 283

Some idea of the extent of the Devils Creek flood may be obtained by comparing the maximum discharge and the run-off per square mile with similar crest figures for Iowa's largest streams.

RIVER	MAXIMUM DISCHARGE IN CUBIC FEET	SECOND-FEET PER SQUARE MILE
Maquoketa	27,500 (at Maquoketa)	17.7
Iowa	42,000 (at Marshalltown)	28.0
Skunk	44,500 (at Augusta)	10.4
Cedar	72,000 (at Cedar Rapids)	10.9
Des Moines	97,000 (at Keosauqua)	6.96
Devils Creek	85,800 (at mouth)	600.0

These figures indicate that only the Des Moines River, which drains an area one hundred times as large as Devils Creek, has exceeded that stream in the maximum discharge of water. Devils Creek, on the other hand, discharged almost one hundred times as much water per square mile as the Des Moines. Small wonder that the Devils Creek flood, because of its immense run-off in second-feet per square mile, should rank as one of the great hydrological phenomena in the United States.

The rainfall of June 10, 1905, was among the heaviest for twenty-four hours ever recorded in the northern part of the United States. The Mississippi spread out almost ten miles wide in some places, property losses were estimated

Devils Creek

at \$3,000,000, and in many instances people were forced to flee for their lives. Although the Mississippi and its tributaries were swollen by the torrential downpour, diminutive Devils Creek is cited by hydrologists as a classic illustration of extreme run-off. The first estimates by engineers were greatly exaggerated. Subsequent investigation, however, has led to the recommendation that the figure be revised to 600 second-feet per square mile, or 85,800 cubic feet per second.²⁸⁴

Few streams, apparently, are more appropriately named than Devils Creek. First to apply the title to this "flashy" little creek was Albert M. Lea, who was stationed at old Fort Des Moines during the years 1834-1835. According to Lea: "Manitou creek rises in a most productive section, a little to the north of the Half-Breed Line, and affords fine lands and timber entirely to its mouth. It is said that there is a tolerable site for a mill on this stream. It takes its name of Manitou, or Devil creek, from its impetuosity in freshet, and from its quicksands and rafts which render it frequently difficult of passage. It is very uneven in its supply of water, having almost no current in dry weather."²⁸⁵

Lieutenant Lea labeled the stream Manitou Creek on his map in 1836, but J. H. Colton caused confusion with his "Map of the Surveyed Part of Iowa", published in 1839, by identifying Manitou Creek as Sugar Creek and indicating the real Sugar Creek farther west as Half Breed Creek. This error was repeated in his township map of Iowa published in 1854. Presently local residents began to call both streams Sugar Creek. By 1875 Andreas's *Illustrated His-*

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torical Atlas showed that the original name had been restored to Sugar Creek and, though Devils Creek was labeled the "Big Devil" below the Panther and Little Devils creeks, Colton's title of Sugar Creek was retained above these two handmaidens of disaster. When Charles Rollin Keyes published his "Geological Map of Lee County" in 1894 he designated the lower stream as Devils Creek but, like Andreas, retained the name Sugar Creek as the proper title for the upper section. The soil map of Lee County published in 1918 calls the main stream Sugar Creek throughout its course.²⁸⁶

Hydraulic engineers and students of hydrology, however, have retained Lea's historical name of Devils Creek. This is as it should be for not only are there already nine Sugar Creeks in Iowa, but there is another and larger Sugar Creek in Lee County itself. Moreover, in 1905 Devils Creek amply demonstrated its right to retain the original name.

THE DES MOINES RIVER

THE Des Moines River is a river of superlatives. It is the longest river in Iowa. It has the widest basin and drains the largest watershed in Iowa. It has more tributaries and larger ones than any other Iowa stream. It rises at the highest altitude of any Iowa tributary of the Mississippi and joins the Father of Waters at the lowest altitude of any other stream. It is the only river which completely crosses the State from its northern boundary to its southern boundary. It has the worst floods, does more damage to crops and homes, and carries more silt than any other river in Iowa. More money has been spent on it for improvements than on any other stream. It was the first Iowa river to be navigated by steamboats, it has carried the largest and most sustained steamboat tonnage, and it was navigated for a greater distance than any other river in the State.

Similar superlatives apply to the Des Moines Valley. It is the largest valley within the State. It contains the largest city and the greatest total population of any river valley in Iowa. More grain and livestock are produced in the Des Moines Valley than in any other Iowa valley. The same is true of coal, gypsum, and clay products.

The history of the Des Moines River begins with the advent of Joliet and Marquette, the first white men known to have seen the mouth of the Des Moines River. For many years their visit to the Illinois Indian village on the bank

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of a river entering the Mississippi from the west was associated with the Des Moines River, although that stream was not mentioned by name in their journals of 1673. Marquette's map, however, showed the Moingouena Indian village located west of the Peouarea Indians whom they visited at the mouth of an unnamed river now believed to have been the Iowa. Farther west he indicated villages of the Oto, Pawnee, Omaha, and Ioway Indians. Joliet's map showed only one river entering the Mississippi between the Missouri and the mouth of the Wisconsin. Although this waterway was not named, it, like Marquette's stream, was approximately in the position of the Des Moines River and the villages of such tribes as the Paoutet (Iowa), Maha (Omaha), Pana (Pawnee?), Atentanta (Oto), Illinois, and Peouarea (Peoria) Indians were represented as being in that valley.²⁸⁷

For more than a century following the Joliet-Marquette expedition, various forms of the word Moingona were used by explorers and cartographers in designating the Des Moines River. Baron Lahontan referred to it in describing his trip down the Mississippi River in 1688. In a letter dated May 28, 1689, Lahontan wrote: "we arriv'd at the Village of the *Otentas* [Oto], where we took in a plentiful Provision of *Turkey* Corn, of which these People have great store. They inform'd us, that their River was pretty rapid, and took its Rise from the neighbouring Mountains; and that the upper part of it was adorn'd with several Villages inhabited by the People call'd *Panimaha*, *Paneassa*, and *Panetonka*." ²⁸⁸ According to Louis Hennepin only two rivers discharged into the Mississippi from the west be-

The Des Moines River

tween the mouth of the Illinois River and the Falls of St. Anthony. These were "the River *Ottenta* [Des Moines], and another [Minnesota?] which discharges it self into it within eight Leagues of the said Falls".²⁸⁹

Despite the designations used by Lahontan and Hennepin the name Moingona persisted. Jean Baptiste Franquelin's excellent map of 1688 showed the "R. de Moingoana" flowing into the Mississippi about one hundred miles south of the Rock River.²⁹⁰ William Delisle's map of 1703 showed the "R. des Moingona" in giant proportions, far larger than either the Mississippi or Missouri, rising in a series of lakes which extended from what is now the Dakotas to what appears to be the Rocky Mountains in Montana. This fantastic waterway apparently was based on the descriptions of Hennepin and Lahontan for it was labeled "Riviere longue" on its upper course which Lahontan claimed to have explored. In his map of 1718 Delisle corrected these errors by representing the Moingona as rising at its proper source east of the Big Sioux in the Pipestone country and skirting the Spirit Lake district. This was the most accurate delineation of the stream up to that time.

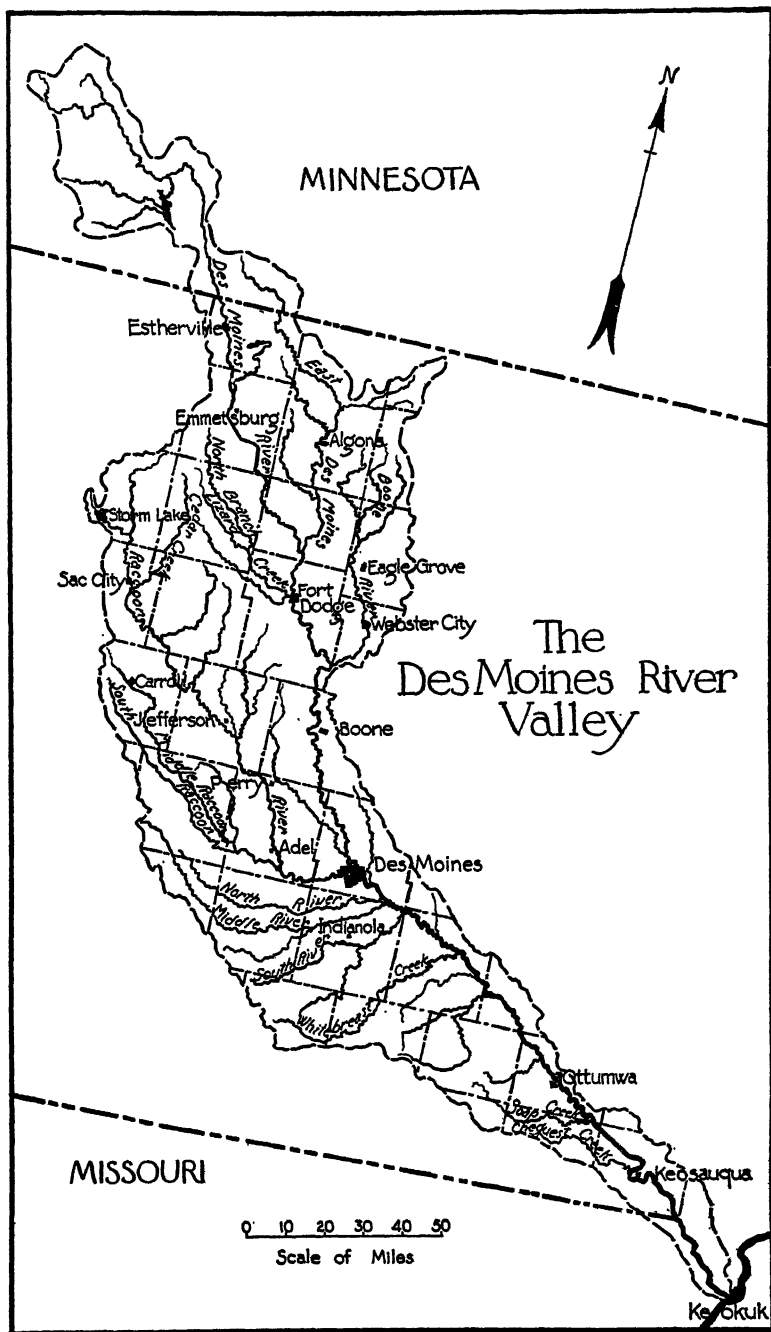
Subsequent map makers seem to have known the true course of the Des Moines. Henry Popple's map of 1733, Bellin's map of 1743, and Delisle's map of 1750 add little to the map of 1718 so far as the Des Moines River is concerned. A map which appeared in the *Gentleman's Magazine* in June, 1763, labeled the Des Moines the "Moingona or Salt R." When James Adair published his *History of the American Indians* in London in 1775 he spelled the name

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"Mohingona". Jonathan Carver's map of 1778 showed an unnamed river flowing through "Buffaloes Meadows" in the approximate position of the Des Moines River. Many other similar eighteenth century maps might be cited.²⁹¹

By the beginning of the nineteenth century the modern word Des Moines began to appear. Samuel Lewis's map of Louisiana printed in 1804 showed the "R. de Moines". Six years later Zebulon M. Pike's map of the Mississippi carried the spelling "River des Moines" and provided the first detailed representation of the river as far upstream as "Redwood", approximately where the State capital is now located. Sixteen of the twenty tributaries shown bore such names as Yellow Bank, Bastard, Bad Buffaloe, Paul, Grand, Village, Buffaloe Horn, Prairie, Little Turn, Two Rivers, Tocane, Glaize, Perault, White Rock, St. Cloux, and Otter. An Ioway Indian village and four forts or trading posts were marked on Pike's map. The "Great turn", of the Des Moines at Keosauqua was clearly indicated and even the "Rapids des Moines" extending up the Mississippi above the mouth of the Des Moines River were accurately named — a fact which was overlooked by the State of Missouri in the boundary dispute with the Territory of Iowa over the exact location of those rapids. William Clark's map, also published in 1810, showed the Raccoon River flowing into the Des Moines.²⁹²

The origin and meaning of the word Des Moines stimulated considerable discussion among the pioneers. That it is a corruption of the old Indian word Moingona, a tribe whose village was located on the river shown on Marquette's map, is perhaps the best explanation. This name



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was used by cartographers up to the nineteenth century and is perpetuated by the town of Moingona.

Another explanation is that Des Moines means the river of the mounds, because of the topography of the country along its banks. Other writers have suggested that the "*la rivière des Moines*" should be translated the "River of the Monks", from the erroneous legend that a party of Trappist monks once lived there. J. N. Nicollet's interpretation of this meaning is perhaps the most logical — that early travelers confused the name of the river with the huge mounds on the American Bottoms opposite St. Louis which were occupied by Trappist monks and called *Moines de la Trappe*.²⁹³

When spelled "*de moyen*" the name has been understood to designate "from the middle" country, a reasonable explanation since both in ancient cartography and actual fact the Des Moines River is the principal stream between the Mississippi and the Missouri. One writer contended that "*De Moins*" should be translated "the less" or "the smaller", from the fact that French traders once distinguished between two Indian villages located on the banks of the Des Moines by calling the smaller village "*De Moin*". The Indians having accepted this word, the white settlers in turn applied it to the river.²⁹⁴

By 1835 when the United States Dragoons marched up the valley, the old "Moingona" of the early explorers had become the "Des Moines" of modern usage. Its physiological features were fairly well designated on Lieutenant Albert M. Lea's map of 1836. "It is about seventy-five miles from the mouth, by water, to the Indian boundary",

The Des Moines River

Lea estimated. "The lands, on both sides of the river, throughout the greater part of this distance, are exceedingly fertile, and many of them are covered with forests of the finest walnut, oak, ash, elm, and cherry; and back of these wooded bottoms are extensive prairies, both flat and rolling. The settlements have long since, that is in the fall of 1835, extended along the river entirely up to the line, and are beginning to spread out on either side, especially towards the head waters of Sugar creek. There are already some extensive farms along this river, and others are in rapid progress." ²⁹⁵

The settlement of the Des Moines Valley covered a period of almost four decades. Some of the pioneers followed the winding stream; more reached the Des Moines across country from various Mississippi River towns. The extinction of Indian titles, the erection of military posts, the surveying and laying out of towns, and the slow but inexorable westward recession of the frontier line all serve as an index to the growth and development of the Des Moines Valley.

The creation of the Half-breed Tract along the eastern bank of the Des Moines in Lee County in 1824 was the first step in this process. The Black Hawk Purchase of 1832 pushed the Indian boundary line about ten miles west of Keosauqua; the Second Black Hawk Purchase of 1837 added another dozen miles along the Des Moines. In 1842 the Sauk and Fox Indians ceded all of central Iowa to the United States. This included the Des Moines Valley to the vicinity of Lehigh in Webster County on the east side and as far north as the Dakota City region in Humboldt Coun-

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ty west of the river. The last Indian claim to land in Iowa was removed in 1851 when the Sioux relinquished their hunting grounds along the Des Moines and its numerous tributaries in north central Iowa. Indeed, the Des Moines Valley was affected by virtually every Indian cession relating to Iowa.²⁹⁶

The Des Moines River served as a military frontier while white settlement impinged on the land of the red man. Fort Sanford was established near Ottumwa in 1842; Fort Des Moines was erected at the Racoon Fork in 1843; Fort Clarke (later Fort Dodge) was set up at the Lizard Fork in 1850, and Fort Defiance was established at Estherville during the Sioux outbreak of 1862. While these posts were occupied only a short time they reflect the steady infiltration of the white man in the Des Moines Valley. More military posts were established on the banks of the Des Moines River than on all the other rivers of Iowa combined.²⁹⁷

As the Indians silently removed their wickiups and headed westward the white pioneers entered the newly acquired territory. The first cabin was erected in the Half-breed Tract near the mouth of the Des Moines by Dr. Samuel C. Muir in 1820. Keosauqua was settled in 1836 and Ottumwa in 1843. Settlers flocked to the site of the present capital following the departure of the United States troops from Fort Des Moines in 1846. Five years later enough settlers had arrived at Boonesboro to demand the erection of a courthouse. In 1854 Major William Williams purchased the barracks and the site of Fort Dodge and platted the town of Fort Dodge. Dakota City was laid out

The Des Moines River

by Edward McKnight in 1855 on a high bluff crowning the divide between the two forks of the Des Moines River in Humboldt County. An Irish colony settled Emmetsburg in Palo Alto County in 1851, and Estherville was settled in 1857 following the Spirit Lake massacre. Thus, the flow of settlers surged up the Des Moines in the wake of the Indian and the soldier.²⁹⁸

The movement of settlers up the Des Moines Valley was followed by a demand for cheap and easy transportation such as the river might afford. Indeed, the Des Moines was the only Iowa stream on which steamboating developed to any significant extent. Small though this commerce was compared with the rich argosies on the Mississippi and the Missouri, it bulked large when compared with the traffic on the Iowa and Cedar rivers. On the basis of sustained tonnage over a period of years the Des Moines River is probably the only Iowa stream that deserved to be termed navigable in fact as well as in law.²⁹⁹

The first steamboat known to have plied the Des Moines River was the *Hero*, a craft unrecorded by Tacitus Hussey and other historians of the Des Moines River. Built at Bridgeport, Pennsylvania, in 1834, this 89-ton craft was 116 feet 3 inches long, 16 feet 11 inches in breadth of beam, and had a depth of 4 feet 9 inches. She was commanded by Captain Kenady who was anxious to "open a communication" between St. Louis and the "towns lying on the Riviere des Moins". After his first attempt to navigate the Des Moines in 1837, he informed the *St. Louis Commercial Bulletin* that he was unable "to proceed more than thirty miles up that stream. It was low, and the

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channel obstructed by sandbars which rendered the navigation difficult, the more so, as it had never before been attempted." Captain Kenady reported that the Des Moines Valley was "exceedingly beautiful" and that he intended to watch the stage of the water and take advantage of the first rise. From his own knowledge and the information he received from those dwelling along the banks of the stream the captain felt confident he could "reach the highest town" on the river. There is no evidence, however, that he ever succeeded in ascending the river again.⁸⁰⁰

Although the *Hero* probably failed to go very far up the Des Moines, the steamboat *Science*, S. B. Clark commanding, won the distinction of navigating that stream as far as Keosauqua during the autumn of 1837. Her arrival with a cargo of flour, meal, pork, and groceries fairly electrified the inhabitants of that western outpost of the Iowa District. After discharging most of her freight, the *Science* continued upstream as far as Iowaville. The steamboat *Pavilion* in command of William Phelps also succeeded in ascending to Iowaville that year. During the next five years steamboats and keelboats alike plied the waters of the lower Des Moines.

In the spring of 1843 the steamboat *Agatha*, James M. Lafferty commanding, set out from Farmington in an effort to carry troops and supplies to the new military post at the Raccoon Fork. The *Agatha* squirmed through the unfinished lock at Plymouth Mills with two keelboats in tow, eased her way through the Bonaparte lock, and churned through a break in the Keosauqua dam. At Fort Sanford she was boarded by Captain James Allen and a

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small force of men, most of the dragoons having ridden overland to the Raccoon Fork. At the present site of Ottumwa where the first settlers were staking out lots, a keelboat was grounded on the "Appanoose Rapids" and the *Agatha* took almost a day to pull the craft off.

A number of squatters landed with their goods at Eddy's Trading Post. "From this point", a member of the crew related, "we had no stop unless it was to chop wood for the steamboat, or take on board some of the big Indian chiefs, such as Keokuk, Appanoose, and their squaws. They were on board two or three days. We found several islands before we reached the Forks, and had to stop at most of them, separate the three boats and take them through the narrow channels one at a time, as the current was very swift. We had to chop all the wood used for making steam after we struck the new purchase. About seven miles below the Forks we found the last island and just as we reached the head of it the steamboat went fast on a rock."

The *Agatha* finally reached the Raccoon Fork and discharged her troops and supplies. Some wood was cut for the return journey and the nose of the *Agatha* turned downstream for a rapid passage to deeper water. At Ottumwa Captain Lafferty found the steamboat *Pavilion* fast aground and obligingly washed her off with the waves of the *Agatha*. Fourteen days were required to make the round trip between Farmington and the Raccoon Fork.³⁰¹

The voyage of the *Agatha* was hailed with delight throughout the country. The St. Louis *Gazette* claimed the gallant little craft had ascended the Des Moines three hundred miles above its mouth, although actual govern-

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ment figures show the distance to be exactly two hundred miles. Captain Lafferty, the *Gazette* editor recorded, "describes the country, through which the river passes, as the most beautiful farming country he has ever seen. The head of navigation on this river is much nearer the Missouri than had been supposed. It is said to be but one hundred miles from Racoon Fort to the Council Bluffs on the Missouri." ³⁰²

In the years that followed many light-draft steamboats plied the serpentine course of the Des Moines. Some made but a single trip, others were regular packets and churned the muddy river as long as the stage of the water permitted navigation. Not a few returned year after year to the Des Moines trade. Prior to the Civil War such steamboats as the *Add Hine* and the *Agatha*, the *Caleb Cope* and the *Charles Rodgers*, the *De Moine Belle* and the *De Moine City*, the *Ed Manning* and the *John B. Gordon*, the *Flora Temple* and the *Colonel Morgan*, the *Pavilion* and the *New Georgetown*, the *Globe*, the *Luella*, the *Jeanie Deans*, the *Alice*, the *Jenny Lind*, and the *Julia Dean*, the *Badger State* and the *Maid of Iowa*, the *Kentucky*, the *Nevada*, and the *Michigan*, the *Light*, the *Lighter*, and the *Time and Tide*, the diminutive *Skipper* and the *Revenue Cutter*, all left their tribute of freight and passengers at the bustling Des Moines River ports.

The name of almost every one of these boats is associated with some notable incident in Des Moines River steamboating. The 485-ton *Jeanie Deans* was probably the largest boat to churn the waters of the Des Moines. This handsome St. Louis and Keokuk packet was 236 feet long, 38½

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feet beam, and $5\frac{1}{2}$ feet depth of hold. When she first came out in 1852 the *Jeanie Deans* made a trip up the Des Moines in high water as far as the Croton Dam but a rapidly receding river caused her to hasten back to the Mississippi lest she be caught high and dry on a sandbar. The side-wheel "three decker" *Flora Temple* was perhaps the largest craft ever to reach Des Moines. In 1858 the little *Skipper* carried some members of the General Assembly home when muddy roads prevented the legislators from using stage-coaches. The *Revenue Cutter* plied the Des Moines in 1849 under the sobriquet of "Rope Cutter" because her deck hands were prone to cut all ferry ropes stretched across the river that interfered with the progress of the boat. The verbal reactions of the ferrymen were more profane than effective.³⁰⁸

The year 1859 has been described as a "boss year" in Des Moines River steamboating. Heavy rains fortuitously spaced afforded good steamboating from March to early August. On March 9th the *Clara Hine* arrived at the capital city of Iowa with sixty-four tons of freight. Close in her wake came the *Charles Rodgers* with a cargo of fifty tons. On April 10th the *Flora Temple* appeared. On a single day an excited Des Moines editor proudly counted five steamboats at the levee — the *Flora Temple*, the *De Moine Belle*, the *Clara Hine*, the *De Moine City*, and the *Charles Rodgers*. That sight was in sharp contrast to conditions in 1857 when the 11-ton *Skipper* was caught by low water at Des Moines and had to stay at that port all summer. The plight of the hopelessly stranded *Skipper* enabled a local editor to boast that "commerce with the outside

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world was thriving, not a day passed that a boat was not at the levee." ⁸⁰⁴

The most notable exploit occurred in 1859 when the *Charles Rodgers* set out from Des Moines on April 4th in an effort to reach Fort Dodge, 110 miles upstream and 310 miles above the mouth of the Des Moines. Only the high stage of the river warranted this seemingly foolhardy venture. Two days later the gallant little craft came snorting up to the Fort Dodge levee amid tumultuous rejoicing. "Yesterday will be remembered by many of our citizens with feelings of extreme delight for many years to come", declared John F. Duncombe. "By the politeness of Captain F. E. Beers, of the *Charles Rodgers*, in company with about one hundred and twenty ladies and gentlemen of the town, we enjoyed the first steamboat pleasure excursion on the Upper Des Moines river. The steamboat left the landing at Colburn's ferry about two o'clock and after crossing the river and loading with coal from the mines, started for the upper ferry. All our citizens are well aware of the most shallow ford on the river at the rapids at this place which is at the head of the island at the mouth of Soldier Creek, where the river divides into two equal channels. The steamer passed over the rapids with perfect ease in the west channel. At the mouth of the Lizard the boat 'rounded to' and passed down the river at racehorse speed in the eastern channel. The scene was one of intense interest. The beautiful plateau on which our town is built was covered with men, women, and children. The river bank was lined with joyful spectators. Repeated hurrahs from those on the boat and on the shore filled the air. The

steamer passed down the river about six miles and then returned.

"Old grudges were settled — downcast looks brightened — hard times were forgotten — everybody seemed perfectly happy. We had always believed that the navigation of our river was practical; but to *know* it, filled our citizens with more pleasure than a fortune. We felt like a boy with a rattle box — 'only more so.' The Fort Dodge steamboat enterprise has succeeded, in spite of sneers and jeers! Long may the friends of the enterprise live to remember the first steamboat pleasure excursion at Fort Dodge!"³⁰⁵

The conquest of the Des Moines River to Fort Dodge was a noteworthy achievement in inland navigation. For sheer audacity the voyage of the *Charles Rodgers* ranks with that of the *Virginia* on the upper Mississippi in 1823 or the ascent of the Missouri by the *Chippewa* in 1859. Fort Dodge citizens were not slow to show their appreciation. At a meeting in the schoolhouse, resolutions were adopted complimenting Captain Beers for his enterprise and urging local merchants to patronize the *Charles Rodgers*. A petition was prepared requesting the State legislature to strike from the statutes the "unconstitutional law" declaring the Des Moines River navigable only to the State capital. This meeting also urged that a suitable draw be placed in all bridges at the capital city, and requested that snags and other river obstructions should be cleared from the river between Des Moines and Fort Dodge. All counties as far north as the State line were urged to present similar petitions.³⁰⁶

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The redoubtable *Charles Rodgers* made four more trips to Fort Dodge before low water forced her from the trade in July. On her second trip she carried twenty tons of freight to Boonesboro, about four tons to Border Plains,³⁰⁷ and ten tons to Fort Dodge. The *Boone County News* was jubilant, feeling it had been "practically demonstrated" that the Des Moines River would "always be navigable as far as Fort Dodge for two to four months in each year". Immediately following her second arrival the *Charles Rodgers* returned to Allison's Mills and brought up twenty-six thousand feet of lumber before returning to Keokuk for the third load. Captain Beers returned on May 24th with the "largest freight" ever landed at Fort Dodge, having refused cargoes at the various Des Moines River ports below. Before the month of June closed the *De Moine Belle* had made two trips to Fort Dodge where, at one time, both steamboats were discharging and taking on freight. Despite the optimism of merchants the year 1859 marked the end of steamboating for Fort Dodge. The low water of 1860, the use of many steamboats by the Union forces down South, and the arrival of the railroad after the Civil War turned Fort Dodge's interests toward other market routes.³⁰⁸

The voyage of the *Agatha* to the Raccoon Fork in 1843 had suggested the possibility of improving the Des Moines River. On June 8, 1846, Augustus C. Dodge, Delegate from the Territory of Iowa, told the House of Representatives that the "Des Moines is navigable for a considerable portion of the year, and is susceptible, with the greatest facility and slightest expenditure, of being made so for

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many hundred miles at all seasons of the year, when not obstructed by ice. The country through which it runs is one of unsurpassed fertility, and is now being densely inhabited. From the central position of this river, and its other advantages, *there are a very large portion of the people of Iowa who believe, and desire, their ultimate seat of Government should be upon it.*" ³⁰⁹

Reassured by such a glowing report, Congress adopted a bill on August 8, 1846, whereby "alternate sections, of the public lands, in a strip five miles in width on each side" of the Des Moines were set aside to aid the Territory or State of Iowa to improve the navigation of the stream "from its mouth to the Raccoon Fork". A Board of Public Works was established and Samuel Ryan Curtis of Ohio was selected as chief engineer. A plat of the survey filed with the board in 1849 called for twenty-eight dams, and a number of locks and canals. The plans also specified a twelve-mile canal from the mouth of the river to St. Francisville, Missouri, where the first dam was built. Dam number two was located at Belfast, number three at Croton, number four near Farmington, the fifth at Bonaparte, number six at Bentonsport, number seven at Keosauqua, number eight near Kilbourn, number nine at Portland, and number ten one mile above Iowaville. The first seven dams with their locks were completed and put into operation, and considerable progress was made on dams numbered eight, nine, and ten. Little or no work was done in connection with the other dams.

The Des Moines River improvement project was the most ambitious attempted on any of the inland waters of

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Iowa. Hundreds of thousands of dollars were spent on it: the stretch between St. Francisville and Keosauqua alone (excluding the canal) cost \$210,000 by 1852. Moreover, costly and protracted litigation ensued over the question whether the law of 1846 meant that land was granted only below the Raccoon Fork or all the way to the Minnesota line. Attorney General Reverdy Johnson declared in 1850 that the grant ran "the entire length of the river within the then Territory of Iowa". This interpretation would have included the whole length of the Des Moines River to its source. The differences in acreage granted according to these interpretations varied from 300,000 acres to 1,300,000 acres. The final act in the drama occurred in 1893 when Congress appropriated \$200,000 with which "to adjust the claims of the settlers on the so called Des Moines River lands in the State of Iowa."⁸¹⁰

Such huge expenditures might have seemed justifiable in a stream the size of the Des Moines. Hopeful pioneers, desperately in need of adequate transportation, were readily deceived by its physical features. Rising in the glacial moraines of Murray County, Minnesota, at an altitude of 1850 feet, the Des Moines flows for 535 miles in a southeasterly direction, discharging into the Mississippi about two miles below Keokuk at an altitude of 476 feet above sea level. It falls a total of 1375 feet, or 2.6 feet per mile. The size of its basin is indicated by the fact that it drains all or a part of seven counties in Minnesota, thirty-nine counties in Iowa, and one county in Missouri. Of the total area of 14,540 square miles, 12,925 square miles of its basin lie in Iowa, or 23 per cent of the total area of the State.

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Some idea of the size of the Des Moines River may be secured by comparing it with other Iowa streams. Its basin in Iowa is greater than those of the Cedar and Iowa combined, while its drainage area in Minnesota is almost equal to the whole valley of the Turkey. Its largest tributary, the Raccoon River, drains an area equal to the basins of the Wapsipinicon and the Upper Iowa combined. The watershed of the East Fork of the Des Moines is exactly twice as large as that of the English River while the basin of the Middle River is exactly equal to that of Cedar Creek, the main southern tributary of the Skunk. The Boone River eclipses the North Skunk while the South River is more than twice the size of the Yellow River. Indeed, the Des Moines and its branches overshadow all other Iowa streams.⁸¹¹

The roll of towns located along the main stream indicates the magnitude of the Des Moines basin. During the course of its 118-mile journey in Minnesota, the river rises at Currie near the junction of Okesida Creek and Shetek Lake, passes through Windom and Jackson, and crosses the northern border of Iowa at a point 415 miles above its mouth. Past Estherville, Emmetsburg, and Bradgate it hurries, joining the East Des Moines a few miles below Humboldt. Continuing on through Fort Dodge, Kalo, Lehigh, Linnburg, and Fraser, the Des Moines passes Boone, 257.8 miles from its mouth. Gliding through the beautiful Ledges State Park, under High Bridge and past Moin-gona, it meets the Raccoon at the capital city. Between Des Moines and Ottumwa it passes such towns as Run-nels, Percy, Red Rock, Howell, Harvey, Tracy, Eddyville,

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and Chillicothe. Below Ottumwa are located Eldon, Selma, Douds, Kilbourne, Keosauqua, Bentonsport, Bonaparte, Farmington, Croton, and Belfast. Keokuk, at the mouth of the Des Moines River, completes the roll-call. In addition to these, Algona on the East Des Moines, Pocahontas on Lizard Creek, Eagle Grove and Webster City in the Boone Valley, Storm Lake, Sac City, Lake City, Jefferson, Adel, Van Meter, and Valley Junction in the Raccoon Valley might be mentioned.

There were 720,000 people living in the valley of the Des Moines in 1925, or 49.5 persons per square mile. Thirty-six per cent of this total, or 255,000, lived in cities and incorporated towns, yet only three cities of the first class are located in the Des Moines Valley. Des Moines, the capital and metropolis of the State, now has a population of 159,819, Ottumwa has 31,570, and Fort Dodge 22,904.⁸¹²

Mighty floods have swirled down the Des Moines, doing their greatest damage to town and countryside in the region below the capital city. The average precipitation in the Des Moines Valley is 31.07 inches, virtually the same as the State average. Variation of normal precipitation in different parts of the valley is rather marked: the average at the headwaters is twenty-six inches per year while at the mouth it is thirty-four inches. A number of points in the valley have been subjected to cloudbursts. In the period between 1890 and 1927, for example, 10.31 inches of rain fell in Clarke County in a single day, Lucas County was drenched with 11.22 inches within twenty-four hours, while Van Buren has been flooded with 12.10 inches in the same length of time. In all Iowa only Sioux, Cherokee, and

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O'Brien counties experienced more torrential downpours.

The worst floods in the Des Moines River watershed have been caused primarily by heavy rainfall, either when the ground was frozen or when it was thoroughly saturated by previous rains. The junction of the largest single tributary with the main stream at Des Moines, the heavier annual precipitation, the greatest rainfall within the space of twenty-four hours, and the presence of two large cities in the lower Des Moines Valley, all combine to give the lower Des Moines Valley the most devastating flood record.⁸¹³

The Des Moines River felt the full effect of the great flood of 1851. Deploring the great loss of property, the Oskaloosa *Herald* declared: "Farms have been cleared of fences, growing crops, houses and everything of a movable nature. The river was never known to be so high before. A vast amount of grain in the cribs has been swept away. The inhabitants on the river bottoms have been compelled to desert their houses and flee to the bluffs for refuge. A number of dwellings were carried entirely away. This calamity will be doubly hard on the citizens of the vicinity of the Des Moines river, as it has not only destroyed the present crops but has taken away the old crops that were in store for the needs of the present season. Eddyville, Ottumwa, Red Rock, and the eastern part of Fort Des Moines are nearly submerged by the overflowing river."⁸¹⁴ The great flood of 1851 became the measuring rod of all subsequent floods.

Typical of high-water disasters in the Des Moines Valley are the following instances. In June of 1858 two steam mills between Ottumwa and Eddyville were washed away.

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On April 16, 1862, the water at Ottumwa stood within three feet of the 1851 stage. Two men were drowned when a switch engine went through a bridge near Boone that had been washed out by the flood of July 6, 1881. On July 7th of that year the Des Moines rose five feet at the capital city. Excessive May rains sent the Des Moines over its banks on June 1, 1903, paralyzing traffic in Ottumwa and the vicinity, driving 8000 persons from their homes, and causing damage to the extent of \$100,000. The maximum discharge at Ottumwa was 100,000 cubic feet per second on May 31st, while at Keosauqua the flow measured 97,000 cubic feet per second on June 1st. Eldon was partially under water. In Van Buren County the damages exceeded \$200,000. Tributary streams were also on the rampage: the Raccoon overflowed at Valley Junction and the Boone was out of its banks at Webster City. On June 6, 1903, the Des Moines discharged 70,000 cubic feet per second into the Mississippi, which was 26.2 per cent of the total flow of the two streams. This was the highest proportion recorded between 1903 and 1927. Heavy March rains sent the Des Moines out of its banks in 1933, causing damage estimated at \$71,000.

By straightening channels and building levees, flood damage has been reduced, but such improvements are expensive. Between 1916 and 1923 three projects in Palo Alto, Pocahontas, and Humboldt counties involved 2,764,770 cubic yards of excavation at a cost of \$365,000, benefiting to some degree 31,953 acres of land. A 25-mile dredging of the Middle River was made at "a cost of about \$24 per acre to the adjoining farm land". Flood protection

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at Ottumwa has reduced the average annual damage to around \$20,000. Maintenance of river improvements at Des Moines should restrict annual losses to \$5000 or less.

Losses by erosion, while not always so apparent, are perhaps equally expensive. The Des Moines River carries about 5,000,000 tons of silt downstream every year. The percentage of suspended matter is seven times that of the Iowa River, five times that of the Mississippi just below its junction with the Des Moines, and about equal to that of the Mississippi River at its mouth. These staggering figures are eclipsed only by the Missouri in which the silt concentration is over three times as great. Since the Des Moines drains a much smaller basin it carries into the Mississippi only 3 per cent of the load delivered by the rampaging Missouri. Despite these losses of top soil, land owners have made no demands for large-scale bank protection to decrease siltage. Indeed, to a certain extent the deposition of silt carried by the stream at high water has been considered a benefit in increasing the fertility of the bottom lands which are submerged at that time. During the past decade, however, the problem of erosion has become increasingly important as farmers have watched with dismay the gradual denuding of the soil.⁸¹⁵

But the history of the Des Moines Valley is not confined to storm and flood: elements of lasting value and beauty may also be found. Of the seventy-two State Parks in Iowa in 1937, almost one-third were located in the Des Moines Basin. From beautiful Okamanpedan Park at the headwaters of the East Fork to Big Duck Lake near Farmington, the valley is dotted with scenic areas. Here may be

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found such aquatic resorts as Tuttle Lake, Rush Lake, Lost Island Lake, Storm Lake, Twin Lakes, Black Hawk Lake, Lake Ahquabi, and Lake Wapello. Historic Fort Defiance State Park at Estherville, reminiscent of the Sioux outbreak of 1862 in Minnesota, may be visited. Such memorial parks as the Ambrose A. Call Park on the East Fork of the Des Moines at Algona, Dolliver Memorial Park on picturesque Prairie Creek near Lehigh, Pammel State Park on Middle River in Madison County, and Lacey-Keosauqua State Park at the great horseshoe bend of the Des Moines in Van Buren County are monuments to prominent Iowans. Vacationists may go to Woodman Hollow near Fort Dodge, study flora and bird life at Barkley Preserve north of Boone, sojourn at Ledges State Park on Pease Creek south of Boone, or picnic amid the giant walnut, elm, and sycamore trees at Walnut Woods on the great bend of the Raccoon River. The largest artificial lake in Iowa is Lake Wapello on Soap Creek in Davis County. Springbrook, five miles north of Guthrie Center on the Raccoon, offers an excellent bathing beach and picnic grounds in rustic surroundings. No other river valley in the State affords more varied recreational opportunities than does the Des Moines.⁸¹⁶

To the scenic charm of this country may be added the romance of history. Sturdy fur traders and adventurers penetrated the Des Moines Valley during the French régime. Their reports formed the chief basis of information for hard-working map makers. From such hearsay accounts Father Charlevoix presented the first detailed description of the Des Moines Valley in 1721.⁸¹⁷ "On the left

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side about fifty leagues above the river of Buffaloes," he wrote, "the river *Moingona* issues from the midst of an immense meadow, which swarms with Buffaloes and other wild beasts: at its entrance into the Mississippi, it is very shallow as well as narrow; nevertheless, its course from north to west, is said to be two hundred and fifty leagues in length. It rises from a lake and is said to form a second, at the distance of fifty leagues from the first.

"Turning to the left from this second lake we enter into Blue River [Blue Earth?], so called from its bottom, which is an earth of that color. It discharges into the river of St. Peter [Minnesota]. Going up the Moingona, we find great plenty of pit coal, and a hundred and fifty leagues from its mouth there is a very large cape [Red Rock?], which causes a turn in the river, in which place its waters are red and stinking. It is affirmed, that great quantities of mineral stones and some antimony have been found upon this cape.

"A league above the mouth of the Moingona there are two *rapids* [Des Moines and Rock Island] or strong currents of a considerable length in the Mississippi, where passengers are obliged to unload and carry their pirogues: and above the second *rapide*, that is about twenty leagues from the Moingona, there are some lead mines on both sides of the river [Dubuque-Galena], which were discovered some time ago [1690], by a famous traveller of 'Canada called Nicholas Perrot, whose name they still bear'."

It took strength and courage to penetrate the Des Moines Valley in those days. Probably the most daring episode in Iowa history occurred in 1735 when Captain Ni-

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colas Joseph de Noyelles set out from Detroit in the dead of winter with instructions to punish the Sauk Indians for the murder of a French officer. De Noyelles had been ordered by his superiors to separate the Sauks from the Foxes and force them to return to Wisconsin to assist in the fur trade. When he reached the Mississippi with his half-starved army he found to his dismay that the Sauks and Foxes had moved inland to the Racoon Fork of the Des Moines. Undaunted, he continued his march with eighty French soldiers and a small force of Indian allies. On April 19, 1735, forty years before the battle of Lexington and Concord, De Noyelles and his ragged, starving followers fought a pitched battle with the Sauk and Fox Indians on the site of present-day Des Moines. This first and only battle between the Indians and white men on Iowa soil ended in a draw, for De Noyelles had to retreat to Fort Chartres with the empty promise that the Sauks would return to Wisconsin.⁸¹⁸ Fourteen years later three Frenchmen were murdered by the Sioux, and in the following autumn a Frenchman and his "slave" were killed on the "Rivière des mouens" by the Little Osages.

During the Spanish régime (1763-1800) reports indicated that the Des Moines Valley was inhabited by the Ioway Indians. These "faroshas" warriors carried on a profitable commerce with English traders much to the annoyance of Spanish officials. Accordingly, in 1781, Monsieur Monbrun with a detachment of forty militiamen was sent among the Sauk Indians to keep an eye on the English and win the support of that tribe. And in 1799 Louis Honoré Tesson was given a land grant near the mouth of

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the Des Moines for similar reasons. Despite these efforts Lieutenant Pike found the English traders were still active on the Des Moines when he passed by in 1805. Until the Iowa country was settled the names of Russell Farnham, Maurice Blondeau, Joseph Laframboise, Pierre Chouteau, and Alexander Faribault appear often in the annals of the Des Moines River fur trade.

After the Louisiana Purchase the Des Moines River became increasingly important. Beginning in the year 1815 a number of herds of cattle were driven northward along the watershed between the Des Moines and Skunk rivers, destined for the Selkirk Colony on the Red River of the North in Canada. In 1817 Major Stephen H. Long found driftwood, snags, and sawyers at the mouth of the Des Moines and reported that the river was too shallow to admit boats very far upstream, though spring floods might make it navigable for Mackinaw boats a distance of from 160 to 200 miles. At that time the Ioway Indians were located 120 miles up the Des Moines.³¹⁹

With the advent of the white settlers the history of the Des Moines Valley fairly throbs with activity. Claims were staked out and homes were built. Villages sprang up like mushrooms; promoters sought to entice settlers to paper towns. Schools were established, churches were organized, and mills were built. Roads, ferries, bridges, stage-coaches, steamboats, railroads, and telegraph lines interested the pioneers who had welcomed the establishment of Fort Des Moines in 1843. The first settlers witnessed the exodus of the Mormons in 1846, caught the fever of the Forty-Niners, and favored Des Moines for the capital in 1857.³²⁰

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In the years that followed, the valley of the Des Moines produced its own heroes and heroines who rank with the immortals of the State. At Moingona, on the night of July 6, 1881, fifteen-year-old Kate Shelley crawled across the Des Moines River bridge in a storm to warn the Moingona station operator that a flood had washed out the railroad bridge over Honey Creek. The operator promptly flagged the midnight express from the west and saved many persons from a disastrous wreck. The Kate Shelley Railroad Bridge over the Des Moines stands as a monument to her heroism.³²¹

In Westlawn Cemetery at Glidden stands the Merle Hay Monument, erected in memory of the first Iowan to lose his life in the World War. At West Bend (which received its name from a large bend in the Des Moines) the Grotto of the Redemption is a monument to the labor and faith of Father Paul M. Dobberstein. Father L. G. Ligutti has left an entirely different monument in the homesteads established by the Federal Resettlement Administration at Granger in 1935. Drake University at Des Moines, Simpson College at Indianola, and Buena Vista College at Storm Lake are symbolical of the educational ideals of the Disciples of Christ, the Methodists, and the Presbyterians in the valley. Citizens of Buffalo Center organized the first consolidated school in Iowa in 1896.³²²

The resources of the valley of the Des Moines are well nigh unlimited. Many other things are raised besides corn and oats, cattle and hogs. Near Winterset the first Delicious apple tree was produced. So much coal was mined in the valley that Ottumwa built a "Coal Palace" measur-

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ing 230 feet in length and rising to a height of 200 feet. President Benjamin Harrison visited the Ottumwa Coal Palace in 1890 and William McKinley was present in 1891. The Cardiff Giant fooled the nation for a while in 1869, but the huge deposits of gypsum from which this famous hoax was carved have brought immense wealth to Fort Dodge and Webster County. Nor should human values be omitted. The Des Moines Valley has produced its share of brains and brawn.⁸²⁸

THE MISSOURI RIVER

THE muddy Missouri has served as a boundary for the Iowa country since the beginning of white settlement. It constituted the westernmost limit of the Territory of Michigan, the Territory of Wisconsin, and the Territory of Iowa. When the Constitutional Convention of 1844 adopted the Lucas boundaries, the Missouri formed the western border of the proposed State. And when Congress substituted the Nicollet boundaries, thereby depriving Iowa of the "natural" boundary of the Missouri River, the pioneers rejected the Constitution of 1844. As a result of this drastic action Iowa was obliged to forego Statehood until Congress accepted the Constitution of 1846, which fixed the western boundary of the State at the Missouri and Big Sioux rivers.³²⁴

Bustling outfitting towns soon sprang up along the Missouri River. From the banks of the "Big Muddy" at Council Bluffs the Mormons set out to establish Deseret in the wilderness. From mushroom towns along this waterway the Forty-Niners trekked westward in quest of Sutter's gold. The Pike's Peak gold rush, the Black Hills gold rush, and the migration to Oregon were typical episodes in the pulsing drama of life along the western border of Iowa. By 1860 the Missouri River was indelibly associated with Iowa in the minds of most Americans. In 1859, when a New Yorker was asked by Dubuque citizens to give a toast

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to the Hawkeye State, he responded: "Iowa — Folded in the arms of the two mightiest rivers on the globe, themselves about to be laced together by railroads; capable of sustaining and remunerating four millions of people at agricultural pursuits alone, may it remain as it has become, the happy home of the children's children of the Empire State." ³²⁵

The history of the Missouri River, like that of the upper Mississippi, goes back to the advent of Joliet and Marquette in 1673. It was early in July that these venturesome Frenchmen first saw the Missouri. As they were paddling quietly down the Mississippi below Piasa Rock (Alton), Joliet and Marquette suddenly heard the "noise of a rapid" which proved to be the Missouri River. "I have seen nothing more dreadful", Marquette wrote in his journal as he noted the "accumulation of large and entire trees, branches, and floating islands" issuing from the mouth of the Missouri with "such impetuosity" that the explorers could not "risk passing through it" without great danger. According to Marquette the "agitation" of the two streams at their confluence made the water "very muddy" so that it "could not become clear."

The Indians were able to furnish Joliet and Marquette only fragmentary information about the Pekitanouï River, as the Missouri was called because of its muddy water. "Pekitanouï", Marquette recorded, "is a river of Considerable size, coming from the Northwest, from a great Distance; and it discharges into the Missisipi. There are many Villages of savages along this river".

Both Joliet and Marquette were convinced that the

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Mississippi would discharge into the "mexican gulf" if it continued southward, but they thought that the Missouri, if it were followed, might afford a highway to the Western Sea. "It would be a great advantage", Marquette wrote, "to find the river Leading to the southern sea, toward California; and, As I have said, this is what I hope to do by means of the Pekitanouï, according to the reports made to me by the savages. From them I have learned that, by ascending this river for 5 or 6 Days one reaches a fine prairie, 20 or 30 Leagues Long. This must be crossed in a Northwesterly direction, and it terminates at another small river, — on which one may embark, for it is not very difficult to transport Canoes through so fine a country as that prairie. This 2nd River Flows toward The southwest for 10 or 15 Leagues, after which it enters a Lake, small and deep, which flows toward the West, where it falls into The sea. I have hardly any doubt that it is The vermillion sea, and I do not despair of discovering It some day".³²⁶

In the years that followed, many other travelers called attention to the Pekitanouï River. La Salle and his men found the stream as large as the Mississippi. Tonty, the "Man with the Iron Hand", declared there were "villages of savages" on the Missouri who made "use of horses to go to war and to carry the meat of the buffalo which they kill." Father Zenobius Membré called the Missouri the "river of the Ozages". "It is full as large as the river Colbert [Mississippi], into which it empties, and which is so disturbed by it that from the mouth of this river the water is hardly drinkable."³²⁷

For a half century following the voyages of Joliet and

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Marquette the Missouri was usually referred to as the "Pekitanouï". On November 9, 1712, for example, Father Gabriel Marest wrote to a fellow priest from the "Cascaskias" Indian village: "Seven leagues below the mouth of the Illinois river is found a large river called the *Missouri* — or more commonly *Pekitanoui*; that is to say, 'muddy water,' — which empties into the Mississippi on the West side: it is extremely rapid, and it discolors the beautiful water of the Mississippi, which flows from this point to the Sea. The Missouri comes from the Northwest, not far from the mines which the Spaniards have in Mexico, and is very serviceable to the French who travel in that country." ³²⁸

Little was added to the white man's knowledge of the Missouri River during the remaining decades of the eighteenth century. William Delisle's map of 1718 rectified the errors of cartographers who had placed too much credence in such men as Lahontan and Hennepin. For two generations thereafter map makers added little more to the knowledge of the Missouri. Even as late as 1794, when Robert Laurie and J. Whittle published "A New Map of North America", the Missouri River was labeled as a stream "whose Head is unknown". The two Englishmen added the following significant comment concerning the Missouri below present-day Council Bluffs: "The French ascend the River Missouri thus high". Only a few tributary streams were listed above the "Great" or Grand River. ³²⁹

Two years later (in 1796) Victor Collot gave a fairly accurate description of the lower Missouri Valley. "The

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Missouri, from its mouth to the river Plate [Platte], flows through a country extremely diversified: the lands on the left side, towards the north, are of the best quality; fine plains sufficiently undulated to carry off the water, intersected with woods of a lofty kind, and which bears marks of the greatest fertility: the right side, on the contrary, is broken by barren heights, and at equal distances by small vallies, which for the most part are covered with sand and gravel."

The region beyond was still shrouded in mystery; Collot apparently knew no more about it than did Laurie and Whittle. "No one has yet penetrated as far as the spot whence this river takes its source;" Collot asserted, "but it is highly probable, from the reports of the indigenous nations, and the structure of this part of the continent, that the Missouri flows from the chain of mountains, called by [Alexander] Mackenzie 'Stony Mountains,' and by the Indians 'Yellow Mountains'." ³³⁰ It remained for Lewis and Clark to give the first detailed description of the Missouri River from its mouth to its source.

The Lewis and Clark expedition was undoubtedly the most important single episode in the history of the Missouri River. The object of this daring undertaking was to secure information concerning the Louisiana Purchase. The party was instructed to explore the Missouri to its source, cross the Rocky Mountains, and find a stream leading to the Pacific Ocean which would offer direct water communication with distant China. Lewis and Clark set out up the Missouri on May 14, 1804, with orders to keep accurate observations of the route, Indians, soil, climate,

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streams, and plant and animal life. They reached the southwestern border of present-day Iowa on July 18th and passed the mouth of the Big Sioux River on August 21st. After wintering among the Mandans near the site of Bismarck, North Dakota, the expedition started out again on April 7, 1805, and reached the Three Forks of the Missouri River on July 27th. Proceeding up the western, or Jefferson Fork, the expedition left the headwaters of the Missouri in mid-August, crossed the Rocky Mountains, and descended the Columbia River to its mouth where they again went into winter quarters. On March 23, 1806, Lewis and Clark began the return journey and reached St. Louis on September 23, 1806.⁸⁸¹ The intrepid explorers were the first white men to cross the continent by this route. They kept valuable records of their journey wherein may be found the first detailed description of the western border of Iowa.

Blistered hands and tired muscles were constant reminders to the men in the Lewis and Clark expedition of the tremendous length of the Missouri River. Between St. Louis and the Boyer River, Clark figured various distances from five to fifty miles less than modern measurements. Between the Boyer and the Little Sioux rivers, however, Clark over-estimated the distances. For example, he placed the Little Sioux 733 miles above the mouth of the Missouri, whereas it is actually only 702.3 miles. It must be remembered of course that the Missouri is continually changing its course, cutting across peninsulas and forming new loops, so that the distances vary from year to year. The following table presents Captain William Clark's estimates

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of distances above the mouth of the Missouri compared with present-day measurements by United States Army Engineers.⁸³²

TO THE MOUTH OF THE:	CLARK'S ESTIMATE	MODERN MEASUREMENTS
Chariton	220	231.0
Grand	240	254.8
Platte	349	405.3
Nodaway	450	483.5
Tarkio	483	508.8
Nishnabotna	508	564.6
Boyer	638	655.8
Soldier	689	678.0
Little Sioux	733	702.3
Floyd	850	767.0
Big Sioux	853	771.2

As the expedition continued upstream Captain Clark's estimates of the distance above the mouth of the Missouri continued to increase above modern measurements. By the time Three Forks, Montana, was reached he recorded the distance above the mouth of the Missouri as 2848 miles compared with today's measurement of only 2474.6 miles. But even the latter figure is twice the distance the Mississippi River travels from Lake Itasca to its junction with the Missouri. Moreover, the Mississippi at Itasca has an elevation of only 1571 feet while the Missouri is 4026 feet above sea level at Three Forks. Above this point the Gallatin, Madison, and Jefferson forks drain 13,880 square miles, an area almost equal to the Des Moines Valley. About half of the basin above Three Forks is occupied by the main ranges of the Rocky Mountains with elevations rising from

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9000 to 11,000 feet above sea level. Both the Madison and the Gallatin rise in Yellowstone Park, at altitudes of 8600 and 9000 feet respectively. The Jefferson River, recognized as the true source of the Missouri, rises at an altitude of 8081 feet, is 248 miles long, and drains an area of 9520 square miles in southwestern Montana. Small wonder that Lewis and Clark, after ascending such a mighty waterway, should err in estimating its length.⁸⁸³

Let us take a swift trip down the mighty Missouri from its headwaters to its mouth, the better to understand and appreciate its extent, its history, and its present development. In performing this imaginary voyage we will have to travel 2722 miles and descend over 7682 feet from the headwaters of the Jefferson River in Upper Red Rock Lake and Swan Lake on the rim of the continental divide.⁸⁸⁴

As we paddle swiftly downstream we pass through the rugged country in which the Crow and the Blackfeet Indians hunted and fought in bygone days. The Indian woman, Sacajawea, long a captive among the Mandan Indians, led Lewis and Clark through this wilderness. On Grasshopper Creek in 1862, the discovery of a rich bonanza resulted in the founding of Bannack, the first capital of Montana Territory. In fabulous Alder Gulch prospectors founded Virginia City, the first incorporated town in Montana. The basin of the three forks includes most of Yellowstone National Park, the Big Hole Battlefield and Lewis and Clark Cavern National Monuments, Beaverhead, Deer Lodge, and Gallatin National Forests, the State Normal College at Dillon and the Montana State College at Bozeman. In 1928 it afforded a homeland for 33,500 people.

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This represents only 2.4 persons per square mile compared with 45 persons per square mile for Iowa. Bozeman, in the Gallatin Valley, is the largest city on the three forks of the Missouri. Its population is 6000. The mountainous terrain, the sterile soil, and a variable yearly rainfall averaging less than half that of Iowa have not encouraged settlement in the basins of the three forks of the Missouri. There has been little change in the population since 1900.

From Three Forks, Montana, the Missouri River flows in a northerly direction through Townsend to the vicinity of Helena, the capital of the State. Continuing in a northwesterly direction along the Big Belt Range, the Missouri surges through the "dark and gloomy" Gates of the Mountains and soon reaches Great Falls, the second largest city in Montana, with a population of 28,822. At Great Falls the Missouri has dropped almost 5000 feet while journeying 450 miles from its headwaters, the altitude at this point being 3300 feet above sea level. It has not, however, begun its eastward journey toward the Mississippi, for Great Falls is almost directly north of the headwaters in the three forks of the Missouri.

Leaving Great Falls behind, the Missouri River starts on a journey of 1494 miles to Sioux City, which in pioneer days was the great outfitting town for the Dakotas and Montana. At Fort Benton, once the head of steamboat navigation and one of the oldest communities in Montana, the Missouri is joined by the Teton River. From this point the Missouri flows eastward for over 300 miles to Fort Peck. Not a single town is to be found on the Missouri throughout this barren region. The construction of one of

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the largest earth dams in the world, begun in 1933, has caused the town of Fort Peck to become a bustling city of 6000 inhabitants. The Fort Peck Dam has a maximum height of 242 feet and stretches 3.68 miles across the Missouri from bluff to bluff. It will cost approximately \$114,000,000 when completed, or more than two-thirds of the total cost of the twenty-six dams that harness the Mississippi between St. Louis and St. Paul. This dam is expected to form a lake 175 miles long with a maximum depth of 240 feet. The storage of surplus water is expected to increase the navigability of the river, aid in irrigation, furnish electric power, and play a part in flood control.

Not far below Fort Peck the Missouri is joined by the Milk River, its fifth largest tributary, with a drainage basin of 23,800 square miles. It is 175 miles from the Milk River to the mouth of the Yellowstone River. Wheat fields cover this land of "boots and saddles". We glide past Wolf Point, Poplar, Culbertson, and on to the site of old Fort Union. Established by the American Fur Company in 1828 just above the mouth of the Yellowstone River, Fort Union was one of the great frontier outposts on the upper Missouri. Its colorful history must forever be associated with such names as Kenneth McKenzie, Jim Bridger, Manuel Lisa, John James Audubon, Father De Smet, and Prince Maximilian. In 1868 Fort Union was dismantled and its timbers were used in constructing Fort Buford, eight miles down the Missouri River in what is now North Dakota.³³⁵

Between the mouth of the Yellowstone and the mouth of the Big Sioux, the Missouri courses for 918 miles through the land of the Dakotas. Flourishing towns such as Willis-

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ton, Bismarck, and Mandan in North Dakota, and Pierre, Chamberlain, Yankton, and Vermilion in South Dakota are strung along the mighty waterway that drains the vast region which once pastured thousands of buffalo. Here military stockades were built, Indian agencies were established, and fur-trading posts did a flourishing business. The names of Fort Randall, Fort Pierre, Fort Sully, Fort Rice, Fort Abraham Lincoln, Fort Berthold, and Fort Buford revive memories of the day when seasoned troops and Indian fighters were transported up and down the Missouri by steamboat. The Lower Brule Agency, the Crow Creek Agency, and the Standing Rock Agency are reminders of an era when the red man was making his last stand along the Missouri.³³⁶

We come now to Sioux City, located just below the mouth of the Big Sioux River, 771 miles from the mouth of the Missouri. Sioux City is almost a hundred miles farther from St. Louis by water than is St. Paul. From Sioux City the Missouri winds its tortuous course southward past Council Bluffs and Omaha, past Plattsmouth, Nebraska City, St. Joseph, Atchison, Leavenworth, and on to Kansas City. The Kansas City-Sioux City stretch of 376.3 miles has always formed a distinct segment of the river particularly in relation to the development of transportation.³³⁷

From Kansas City the Missouri runs almost directly eastward 390.7 miles to its junction with the Mississippi eighteen miles above St. Louis. Along this section of the river are located such historic places as Waverly, Brunswick, Glasgow, Boonville, Jefferson City, Hermann, and

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St. Charles. This is the country to which Daniel Boone fled when Kentucky became overcrowded. This is the part of the river that led to the Santa Fé Trail. This is the Missouri that witnessed savage guerrilla attacks on steamboats during the Civil War. This is the Missouri that carried the heaviest traffic in furs and pelts, in Indian annuities and military supplies, and in the goods of the first pioneers. On the Missouri River between St. Charles and Westport Landing (Kansas City), the story of transportation on the Big Muddy had its beginnings.

The fur trade was well established on the Missouri before St. Louis was founded in 1764. The river, therefore, was a highway for transportation and communication long before the advent of the steamboat. In early days the wooden canoe or "dugout" was the most common Missouri River craft. The huge cottonwood trees that grew along the Missouri River bottoms were frequently converted into canoes thirty feet long and three and one-half feet wide, modeled at bow and stern. Ordinarily, however, they did not exceed twenty feet in length. These log canoes were strong, light, and easily managed. The birch-bark canoe, on the other hand, was not rugged enough for the snag-infested and sandbar-studded Missouri.

Several other types of boats were used on the Missouri. Sometimes a cottonwood dugout was squared at the stern and called a "pirogue". This name was more frequently used, however, to designate two such boats rigidly united in parallel positions a few feet apart, the intervening space being completely floored over to provide cargo room. The "Mackinaw" boat, first used on eastern lakes, also became

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very popular in the Missouri River fur trade. It was made of sawed timber and often measured fifty feet in length by twelve feet in beam. Such boats could carry about fifteen tons of freight and make from 75 to 150 miles per day downstream. The Mackinaw boats were not discarded following the coming of the steamboat. They were frequently carried up the Missouri River on the annual boat of the American Fur Company and used to transport pelts downstream. H. M. Chittenden declared that they were "quite safe" and the fur traders preferred them to keelboats for downstream navigation.

Still another craft, the bullboat, was used by the traders on the Missouri. This boat, made of skins stretched over a frame, was adopted because of shallow water on such streams as the Platte, the Niobrara, and the Cheyenne. Often measuring thirty feet in length, twelve feet in width, and twenty inches in depth, the bullboat was probably, for its size, the lightest draft vessel ever constructed.

The most popular craft on the Missouri before the steamboat era was the keelboat. Usually built at Pittsburgh at prices ranging from two to three thousand dollars, the keelboats were rather large, measuring from sixty to seventy feet in length, from fifteen to eighteen feet in breadth of beam, and three or four feet in depth of hold. It was the keelboat that carried most of the military and exploratory expeditions on the Missouri. It was the keelboat, too, that transported most of the merchandise to the upper reaches of the river. The names of such men as Lewis and Clark, Zebulon M. Pike, Manuel Lisa, Wilson P. Hunt, John C. Luttig, Stephen W. Kearny, and Henry

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Atkinson are associated with this method of transportation on the Missouri.

The movement of such crude craft was sluggish but sometimes exciting. One of the greatest races of all times occurred in the spring of 1811 when Manuel Lisa endeavored to overtake the Astorian expedition in command of Wilson P. Hunt. Lisa, a founder of the Missouri Fur Company, set out from St. Louis in March of 1811 and caught up with Hunt and his men in June, traveling about 1100 miles in sixty-one days, or about eighteen miles per day upstream. This "Marathon of the Missouri" is a prominent exploit in the epic of the American fur trade.³³⁸

The history of steamboating on the Missouri closely parallels that of the upper Mississippi. The straggling settlements along the lower Missouri welcomed the first steamboat only two years after the *Zebulon M. Pike* reached St. Louis in 1817. On May 19, 1819, the *Franklin Missouri Intelligencer* announced the departure of the steamboat *Independence* for Franklin and Chariton, Missouri. A week later the same newspaper recorded "with no ordinary sensations of pride and pleasure", the arrival of the *Independence* at Franklin with passengers and a cargo of flour, whisky, sugar, and iron castings. Cannon roared a salute and the captain and passengers were regaled with a grand dinner. "At no distant period", the editor of the *Intelligencer* exulted, "may we see the industrious cultivator making his way as high as the *Yellow Stone*, and offering to the enterprising merchant and trader a surplus worthy of the fertile banks of the Missouri, yielding wealth to industry and enterprise."

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But this enthusiasm was short lived; the Missouri River was not yet conquered. In June, 1819, a fleet of five steamboats — the *Johnson*, the *Calhoun*, the *Expedition*, the *Jefferson*, and the *Western Engineer* — endeavored to stem the swift current of the Big Muddy as far as the site of the Lewis and Clark encampment at Council Bluff. Only one of these boats succeeded in ascending the Missouri above what is now Kansas City: the *Western Engineer* actually reached its objective just above where modern Omaha is located.³³⁹

Between 1820 and 1840 a steadily increasing number of steamboats plied the Missouri. The Sante Fé trade, the transportation of troops and supplies, the traffic in furs and pelts, and the Indian trade served to augment the commerce of such squatter settlements as St. Charles, Cote Sans Dessein, Boonville, Franklin, Chariton, Jefferson, Westport Landing, Fort Leavenworth, and "Blacksnake Hills" as St. Joseph was once known. When Charles Augustus Murray steamed up the Missouri in 1835, he found settlements numerous. Few deer could be seen along the banks. Land prices on both sides of the river ranged from \$1.50 to \$5.00 per acre. Murray described Boonville as a "deserving" place but thought most of these settlements had unhealthy locations. At that time Liberty was the "last western village in the United States."³⁴⁰

The activity of steamboats on the lower Missouri was recorded in western newspapers. Sixteen boats were operating in the spring of 1837 — the *Dart*, the *Howard*, the *Chariton*, the *Boonville*, the *Glasgow*, the *St. Lawrence*, the *Bridgewater*, the *Kansas*, the *Astoria*, the *Wilmington*, the

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American, the *Emerald*, the *St. Peters*, the *Fayette*, the *A. M. Phillips*, and the *Belle of Missouri*. New boats were constantly entering the trade but they were unable to meet the demands of the country. Freight and passenger rates were high and all the boats seemed to be doing a lucrative business.³⁴¹

Four years later, in 1841, twenty-six steamboats were engaged in the Missouri River trade. Glasgow chronicled 312 steamboat arrivals that year, the regular packet *Iatan* making twenty-four weekly trips between that port and St. Louis. It was estimated that 46,000 tons of freight were transported by steam craft on the Missouri River that year. Impressed by such activity a Missouri editor pointed out that for years the Missouri had been considered scarcely navigable for keelboats whereas in 1842 "splendid" steamboats ran "night and day".³⁴²

When Reverend John Todd came to Fremont County in 1848 he found steamboating on the Missouri "slow and dangerous". "Boats passed up only at irregular intervals," one pioneer related, "and not unfrequently remained for weeks upon sandbars and snags." By 1857 the *Nebraska City Advertiser* declared no trade in the United States, and possibly in the world, employed as many steamboats as the Missouri River. Forty-six steamboats valued at \$1,269,000 were running on the Missouri that year and a dozen new boats were under construction. The editor pointed out that officers and crews on Missouri River steamboats received higher wages than were paid steamboatmen on other streams.³⁴³

The peak of steamboat transportation on the various

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sections of the Missouri River occurred at widely different times. The period of decline was ushered in the moment the railroad linked the Big Muddy with the East. Thus steamboating reached its high point at Kansas City in 1858 when sixty regular packets were docking at that port of call. In addition almost two score of transient craft were recorded by the Kansas City wharfmaster. It was no uncommon sight to see five or six steamboats lying at the Kansas City levee taking on and discharging freight and passengers. With the completion of the railroad from Hannibal to St. Joseph in 1859 the river lost its dominant rôle in the commerce of that busy port.³⁴⁴

Meanwhile, Council Bluffs and Omaha had become bustling river towns. For a score of years following the advent of the Mormons in 1846, the loess hills of Council Bluffs echoed to the throaty blast of the steamboat whistle. In 1848 Orson Hyde began printing the *Frontier Guardian* just in time to chronicle the stampede of the Forty-Niners to California. In 1853 the town of Council Bluffs was given a charter and the old name of Kanesville disappeared. A land office was established in the same year. When W. H. Livingston passed through Council Bluffs in 1860 he described it as a "dirty little place". Omaha was of "still less consequence". But these two towns flourished, as thousands of tons of material for the construction of the Union Pacific Railroad were transported upstream by steamboat. In 1867 the iron horse of the North Western Railroad slaked its thirst in the muddy Missouri. Two years later the golden spike was driven at Promontory Point, completing the trans-continental railroad. By the time the rail-

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road bridge linked Council Bluffs and Omaha in 1873, steamboating had become of secondary importance to both towns.

The same story was repeated at Sioux City, a straggling frontier town that received its first real impetus in 1856 when the steamboat *Omaha* arrived with a sawmill, lumber, dry-goods, hardware, and other commodities. It cost \$24,000 to bring this freight, valued at about \$70,000, upstream from St. Louis. Thereafter steamboating became the primary means of transportation and communication between Sioux City and the outside world.³⁴⁵

Sioux City became a great outfitting point for the Dakotas and Montana. "The *Shreveport* did not leave the levee for Fort Benton until Saturday last", declared the *Sioux City Register* of August 2, 1862. "Large amounts of freight were shipped from Sioux City for the mines. It was significant of a new era and a larger demand for the Sioux City trade to see our merchants packing boxes of goods directed Bitter Root Valley, Washington Territory." Two years later, on February 23, 1864, the same paper hailed the formation of the St. Louis and Fort Benton Transportation Line composed of the *Benton*, the *Welcome*, and the *Florence*. These light-draft craft had been built expressly for the Missouri trade and were advertised to carry cabin passengers between St. Louis and Fort Benton for \$150 per person and deck passengers for \$75. Each passenger was allowed one hundred pounds of baggage. According to the printed schedule the *Benton* was to leave St. Louis on March 19th, the *Welcome* on April 2nd, and the *Florence* on April 16th. "Persons going by this line",

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H. D. Booge & Company declared, "are certain to get to the Mines with their goods early and without delay as the very fast and light draught stern wheel steamer *Benton*, built expressly for low water will remain above Fort Union (the mouth of the Yellow Stone) during the season and take the freight of the *Welcome* and *Florence*, should it be necessary on account of low water. Each boat will be officered and manned by skillful and experienced boatmen, some of whom have explored the Upper Missouri in Mackinaw boats, and are thoroughly acquainted with its navigation." Such advertisements were common in Missouri River newspapers.

In the spring of 1867 Sioux City reported forty steamboats bound for Fort Benton loaded with a total of 20,000 tons of freight. A week later the steamboat *Only Chance* passed Sioux City bound downstream from Fort Benton. The *Only Chance* carried a half million dollars worth of gold dust besides a heavy cargo of pelts and buffalo robes. On her way down she met forty-five steamboats between Fort Benton and St. Joseph bound upstream with freight and passengers.³⁴⁸

When the Dubuque and Sioux City Railroad was completed to the Missouri River in 1870, commerce with the lower Missouri ports declined. Sioux City continued to be an important outfitting town for Dakota and Montana. "HO FOR THE BLACK HILLS", cried the paper in 1872 as it listed wagons, ox yokes, chains, picks, spades, shovels, gold pans, camp stoves, Dutch ovens, camp kettles, and other goods for the "New Eldorado" of the upper Missouri. Meanwhile the traffic to Fort Benton continued: the *Nellie*

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Peck, Far West, E. H. Durfee, Esperanza, Fontenelle, Sioux City, Western, Mary McDonald, and Katie P. Kountz all docked at that port in 1872.³⁴⁷

Steamboats engaged in the Fort Benton trade were generally called "Mountain Boats". The traffic with that western outpost had been inaugurated on July 17, 1859, when the gallant little *Chippewa* arrived at Brulé Bottom, fifteen miles below Fort Benton. "This noteworthy event", Hiram M. Chittenden declared, "must be classed as one of the celebrated feats in steamboat navigation. The *Chippewa* had reached a point further from the sea by a continuous water course than any other boat had ever been. She was now 3560 miles from, and 2565 feet above, the ocean, and the whole distance had been made by steam on a river unimproved by artificial works."

On July 2, 1860, the *Chippewa* and the *Key West* came panting up the Missouri and tied up at the Fort Benton levee. During the following year there were no arrivals: the *Chippewa* had burned to the water's edge at Disaster Bend while bound upstream for Fort Benton. The limited season of navigation, the great length of the trip, the difficulty of navigating the tortuous and snag-infested channel, permitted most boats to make only a single trip during the course of the season. In 1862 there were four arrivals at Fort Benton; in 1866 there were thirty-one; and in 1867 there were thirty-nine, the largest number ever recorded at that post. By 1874 the number had declined to six. The completion of the railroad to Bismarck in 1872 rang the death knell for steamboating on the upper Missouri, although a few boats were employed in transporting freight

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above that point until the completion of the railroad to Fort Benton.

The profits reaped by steamboats engaged in the mountain trade were immense. First class passage usually cost \$300, while freight cost from ten to fifteen cents per pound. On one trip the *St. Johns* cleared \$17,000 and the *Octavia* \$40,000. The *W. J. Lewis* cleared her original cost of \$60,000 in a single round trip in 1866. The *Peter Balen*, a disreputable old craft not worth over \$15,000, made a profit of \$65,000 on one trip.⁸⁴⁸

Such fabulous profits, however, were often matched by dismal losses, for the Missouri became the graveyard of many a gallant little craft. No other stream in America, perhaps, can match the unenviable record of the losses sustained by Missouri River steamboats. Nine steamboats were sunk at Onawa Bend alone, graphic testimony of the dangers between Omaha and Sioux City. Many bends were named for steamboats wrecked at tortuous curves along the Big Muddy. Malta Bend, for example, was named for Joseph Throckmorton's *Malta* which sank to her hurricane deck in a little over a minute. Captain W. J. McDonald has compiled a list of 441 boats sunk or damaged on the Missouri, 240 of which were snagged. The property loss was set at \$8,823,500.⁸⁴⁹

Such contrasts of gain and loss were typical of the nature of the Missouri itself. "Of all the variable things in creation", a Sioux City editor declared, "the most uncertain are the action of a jury, the state of a woman's mind, and the condition of the Missouri River." There were, and still are, good reasons for the changeable character of the

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Missouri River. First of all, it is the longest river in North America, draining an area of 529,000 square miles, almost ten times the area of Iowa. This enormous basin has a climate ranging from semi-humid in its eastern third to arid in its western third. The average annual rainfall for the entire basin is about twenty inches, varying from about sixteen inches in the west to about forty inches in the east. In the arid section west of the 104th meridian, irrigation is employed wherever feasible. In the middle third (from the 104th to the 98th meridian) dry farming is carried on successfully in all but drouth years. The Missouri slope of Iowa is included in the eastern third of the Missouri basin and contains some of the richest land in America.

Millions of dollars have been spent on the Missouri River in an effort to control floods, improve navigation, and eliminate soil erosion. Floods on the lower Missouri usually come during the period from May 16th to July 15th. Major floods occurred in 1844, 1881, 1903, 1908, and 1915. The flood of 1844 was the largest but that of 1903 was the most destructive, due to the inundation of valuable urban and rural areas that had developed along the Missouri since 1844. According to United States Army Engineers, the maximum, mean, and minimum discharges at the mouth of the Missouri are respectively 900,000, 96,300, and 12,500 cubic feet per second, figures which testify to the variable nature of the Big Muddy. Between 1900 and 1933 the flood stage at Kansas City has been exceeded seventeen times. Approximately 2,121,800 acres of agricultural land in the Missouri Basin are subject to destructive floods. These lands lie along the main stream between St. Joseph

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and the mouth of the river, and in the basins of the Osage, the Grand of Missouri, the Kansas, the Big Sioux and the Little Sioux, the James, and the Milk rivers. The average flood loss has been estimated to be about \$4,500,000 annually.

The recent inauguration of Federal Barge Line service between St. Louis and Kansas City ushered in a new era of transportation on the Missouri. In 1939 a grand total of 121,041 tons was handled between these two ports, 79,982 tons being bulk wheat. In 1939 the first tow of oil was brought to Omaha and in 1940 Sioux City rejoiced when the towboat *Kansas City Socony* brought 400,000 gallons of gasoline to that port. River enthusiasts are hopeful that a fairly permanent stage of water may be maintained in the Missouri when a sufficient supply is impounded behind the great Fort Peck Dam. Much will depend upon the Missouri itself.

According to humorist George Fitch: "There is only one river with a personality, a sense of humor, and a woman's caprice; a river that goes traveling sidewise, that interferes in politics, rearranges geography and dabbles in real estate; a river that plays hide-and-seek with you today, and tomorrow follows you around like a pet dog with a dynamite cracker tied to his tail. That river is the Missouri." ⁸⁵⁰

THE BIG SIOUX RIVER

On the Mountains of the Prairie,
 On the great Red Pipe-stone Quarry,
 Gitche Manito, the mighty,
 He the Master of Life, descending,
 On the red crags of the quarry
 Stood erect, and called the nations,
 Called the tribes of men together.

THE earliest French explorers and traders called Longfellow's "Mountains of the Prairie" the "*Coteau des Prairies*", a name which appeared on early maps long before the poet sang of Hiawatha. The "*Coteau des Prairies*", a large elevated district enclosed by a contour line 1500 feet above sea level, embraces all of Pipestone County and most of Lincoln, Murray, Nobles, and Rock counties in Minnesota. It dips over into Iowa to include the Sibley-Ocheydan Mound region, which is the highest land in the Hawkeye State.⁸⁵¹

Jonathan Carver heard of the "Mountains of the Prairie" when he wintered among the Sioux on the Minnesota River in 1766-1767. George W. Featherstonhaugh made an extensive "geological reconnaissance" of these high lands in 1835. George Catlin sojourned on the "*Coteau des Prairies*" during the summer of 1836. J. N. Nicollet visited the region a few years later. Situated in northwestern Iowa, southwestern Minnesota, and eastern South Dakota, the

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Coteau des Prairies is perhaps the most notable physiographic feature of the Big Sioux Basin.³⁵²

From this high plateau rivers flow in nearly all directions. Northward the Red River of the North finds its way into distant Hudson Bay. The Minnesota River, having received its tribute from the Whetstone, the Yellow Bank, the Lac qui Parle, the Yellow Medicine, the Redwood, and the Big Cottonwood rivers, all of which fall from the eastern slope of this highland, proceeds in a northeasterly direction to unite with the Mississippi. The Des Moines River flows to the southeast. Draining the Coteau des Prairies from the south are the Rock River, the Little Rock River, and the Little Sioux River. The Big Sioux River, fed by such streams as Split Rock, Pipestone, and Flaudreau creeks, is the dominant physical feature along the western border of the Coteau des Prairies. The historical, geological, and legendary stories concerning these streams are as interesting as their courses are diverse.³⁵³

The waterways that find their sources in the Coteau des Prairies have had tremendous geographical importance. The Red River of the North drains 35,500 square miles in Minnesota and North Dakota; the Minnesota River has a basin of 16,147 square miles; the watershed of the Des Moines River embraces 14,540 square miles; and the Big Sioux River drains 9415 square miles. Although the Red River of the North has no connection with the rivers of Iowa, the portage between its headwaters and the source of the Big Sioux is not very long. A relatively short drainage ditch would easily unite the waters that find their way into Hudson Bay and the Gulf of Mexico.³⁵⁴

The Big Sioux River

The Minnesota River is of greater interest to Iowans because one of its main tributaries, the Blue Earth River, has its headwaters in Kossuth and Winnebago counties in Iowa. Lieutenant Colonel Stephen W. Kearny marched his tired dragoons southward along the Blue Earth in 1835. They camped on the open prairie in what is now Kossuth County, "without wood and bad Water & consequently without eating." Rake, Ledyard, and Lakota are among the towns located in the only river valley in Iowa that slopes northward. By the time it reaches the Minnesota boundary, the Blue Earth has drained an area equal to about ten townships.⁸⁵⁵

The Big Sioux River is the largest Iowa stream on the Missouri slope. It is the main drainage trough for the west flank of the Coteau des Prairies. It forms the northern segment of the western boundary of the Hawkeye State for nearly a hundred miles, skirting Lyon, Sioux, and Plymouth counties before emptying into the Missouri at Sioux City. Among the rivers of Iowa the Big Sioux is exceeded only by the Des Moines in the length and the size of its basin. Its valley is twice as large as that of the Iowa River and almost nine times as large as the basin of the Upper Iowa. Few Iowa streams are more appropriately named; it traverses a favorite hunting ground for the mighty Sioux Indians.

The Big Sioux rises at an altitude of 1760 feet above sea level in Grant County, South Dakota, and flows 390 miles to its junction with the Missouri at Sioux City. It rises at a higher altitude than any other Iowa stream and it discharges at an altitude of almost 1100 feet above sea level.

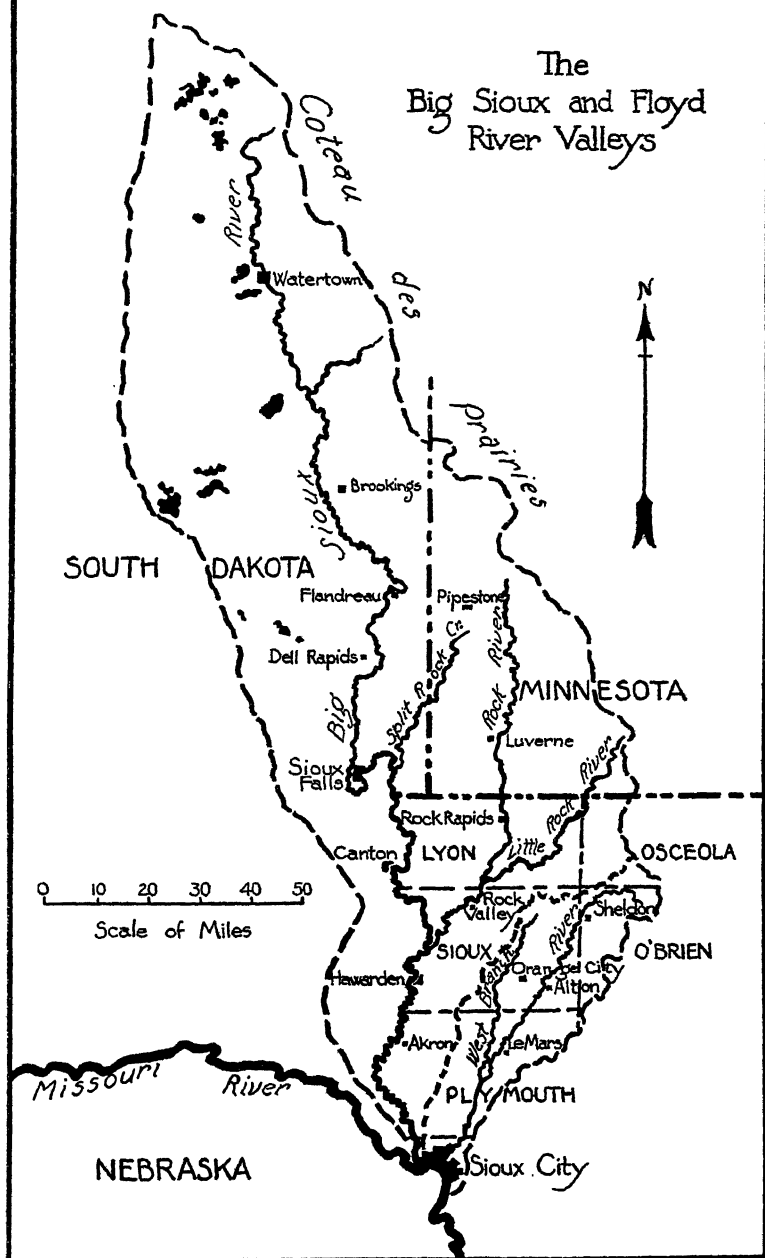
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The Big Sioux is primarily a South Dakota stream, only a small part of its basin being in Iowa and Minnesota. It drains an area of 9415 square miles, only 1345 of which are in Iowa, an area equal to 2.4 per cent of the State.

The largest tributary of the Big Sioux is the Rock River which is named from the Red or Sioux Falls quartzite, the oldest exposed rock in Iowa. The Rock River drains 1645 square miles, 715 square miles of which are in Iowa. Such towns as Luverne in Minnesota, and Rock Rapids, Doon, and Rock Valley in the Hawkeye State are situated on the Rock which, with its chief tributary, the Little Rock River, is the principal stream in Lyon and Sioux counties. The towns of Little Rock and George are located on the Little Rock River.³⁵⁶

The earliest cartographers were well acquainted with the Big Sioux. William Delisle's map of 1703 gave a hint of the Big Sioux as a tributary of the Missouri. His map of 1718 showed the Big Sioux labeled "R. du Rocher". This amazing map represents the *Chemin des Voyageurs* (Road of the Traders) as crossing what is now northern Iowa from the mouth of the Wisconsin River to an Aiaouez (Ioway) Indian village located on the east bank of the Big Sioux somewhere between modern Hawarden and the present Gitchie Manitou State Park. Three villages of the Maha or Omaha Indians were indicated as being situated on the west bank of the stream opposite this Ioway village. The headwaters of the Big Sioux were also in fairly accurate relation to the Des Moines, the Minnesota, and the Red River of the North. When it is remembered that this map of 1718 was drawn almost a century before the Lewis

The Big Sioux and Floyd River Valleys



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and Clark expedition and was based on the fragmentary information from fur traders and voyageurs, it is truly an extraordinary document.³⁵⁷

William Delisle's accurate delineation of the Big Sioux and adjacent waters in 1718 stands in sharp contrast to Jonathan Carver's effort sixty years later. Carver's map of 1778 shows neither Delisle's detail nor his precision. The venturesome Connecticut Yankee omitted the Big Sioux entirely and placed the Pipestone quarries in the area drained by the Blue Earth River. Other errors are equally glaring.³⁵⁸ Lewis's map of 1804 is just as fragmentary as Carver's in its information about the Big Sioux and the surrounding country. It was not until after the Lewis and Clark expedition that Americans began to get an accurate description of the Missouri River and its Iowa tributaries.

William Clark's map of 1810 showed the Big Sioux with such eastern tributaries as the "Red Pipe Stone", the "R. of the Rock", and the "Prickly Pear R.". According to this map the Big Sioux had its source in the "High Land covered with Wood called Mountain of the Prairie". Clark's map also indicated that in the land between the Big Sioux and the James River "the different Bands of SIOUX meet every Spring to trade with each other and the white Traders who visit them". The Indian policy of meeting at the Pipestone quarries in friendship to collect stone for pipes was also noted. Subsequent maps merely added further information about the Big Sioux and its tributaries.³⁵⁹

The first detailed description of the Big Sioux was prepared by Lewis and Clark after the expedition passed the

The Big Sioux River

Floyd River on August 21, 1804. According to William Clark's *Journal*: "We Set out verry early this morning and proceeded on under a gentle Breeze from the S. E. passed Willow [Perry] Creek Small on the S. S. below a Bluff of about 170 feet high and one $\frac{1}{2}$ M.¹⁸ above Floyds River at $1\frac{1}{2}$ Miles higher & above the Bluff passed the Soues [Sioux] River S. S. this River is about the Size of Grand river [with a basin of 7900 square miles] and as M^r Durrien our Soues intpt^r. says 'is navigable to the falls [Sioux Falls, South Dakota] 70 or 80 Leagues and above these falls Still further,' those falls are 20 feet or thereabouts and has two princepal pitches, and heads with the S^t. peters [Minnesota River] passing the head of the Demoin [Des Moines], on the right below the falls a Creek [Split Rock] comes in which passes thro Clifts of red rock [catlinite — a red pipe-stone] which the Indians make pipes of, and when the different 'nations meet at those quaries all is piece [peace]'.³⁶⁰

Many other notable travelers wrote their impressions of the Big Sioux. Henry M. Brackenridge recorded in his journal on May 20, 1811: "Passed at day light the great Sioux river, which takes its rise in the plains, between the Missouri, and the waters of the lake Winipec [Winnipeg]; it is five or six hundred miles in length. I ascended the bluffs, high clay banks of sixty or an hundred feet. The current is here very strong." In the following year (on July 7, 1812), John C. Luttig, a clerk employed by the Missouri Fur Company, reached the mouth of the Big Sioux River.³⁶¹

On September 17, 1824, a military expedition com-

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manded by Brigadier General Henry Atkinson left St. Louis in keelboats bound for the mouth of the Yellowstone. After wintering at Council Bluff in Nebraska the expedition continued upstream with Major Stephen W. Kearny in command of the First United States Infantry aboard the keelboats *Beaver*, *Otter*, and *Muskrat*. Kearny and his men rested at the mouth of the Big Sioux River to await the arrival of General Atkinson.

As they were approaching the Big Sioux on their return trip in the fall of 1825, the soldiers saw seven black bears and shot five of them. The current of the snag-infested Missouri was very swift at this point and the *Muskrat* was wrecked almost beyond repair. Because of this accident Kearny and his men again spent the night at the mouth of the Big Sioux. Some boats passing upstream supplied them with newspapers and the crew of the keelboat *Elk* brought in seven elk they had shot. The juicy meat must have been doubly appreciated as the men read or listened to the news of the world from which they had been absent a year lacking only two days. Game, including fish, was plentiful. On the following morning Kearny noticed that geese, ducks, and turkeys were numerous.³⁶²

When Maximilian, Prince of Wied, steamed by on the *Yellowstone* on May 8, 1833, he learned that the Big Sioux River was a boundary for the Dakotah or Sioux nation. "Its breadth, at the mouth," Maximilian recorded, "is about sixty paces, and it is said to be navigable by Mackinaw boats for 100 miles. About 120 miles up this river, a tribe of the Sioux reside, which is known by the name of Wahch-Pekuté [Wahpekute]; this, and another tribe of

The Big Sioux River

this people on the Mississippi, and near Lake Pepin, are the only ones of their nation who plant maize; all the other hordes of the Sioux are hunters." Upon his return a year and a day later, on May 9, 1834, Maximilian saw "the great heron and a flock of pelicans" flying northward up the Big Sioux.

Almost every traveler passing the mouth of the Big Sioux mentioned the stone quarries located on Split Rock Creek from which the Indians fashioned their pipes. The Big Sioux River was generally associated with these quarries. According to Longfellow in his "Song of Hiawatha",

From his footprints flowed a river,
Leaped into the light of morning,
O'er the precipice plunging downward
Gleamed like Ishkoodah, the comet.
And the Spirit, stooping earthward,
With his finger on the meadow
Traced a winding pathway for it,
Saying to it, "Run in this way!"

Maximilian, who had traveled widely on three continents, described the pipes of the Dakotah Indians as the "most beautiful" craftsmanship exhibited by any North American Indians. "The red pipe-clay is found chiefly on a lateral stream of the Big Sioux River," he recorded. "The several Indian tribes behave peaceably towards each other while they are digging up the stone in that place, but again treat each other as enemies as soon as they have left it. Persons who have visited the quarries on the Big Sioux River have given me the following description of them: the red stone occurs in large beds of strata, where the per-

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pendicular sides of the stream show divers alternating layers. The strata of red stone, which are at the most a foot thick, alternate with yellow, blue, white, and other kinds of clay. The green turf on the surface, and the upper stratum, are removed, and the red-brown colour of the stone is generally more lively and beautiful the deeper you go down. It is possible to obtain large pieces, and to make beautiful slabs of them. The Indians make not only pipe-heads of this stone, but likewise war-clubs, which, however, are only carried in their hands for show.”³⁶³

On account of its rich store of pipestone, the valley of the Big Sioux was well known to Indian tribes and explorers and the strategic location of the river was recognized during the American period. Travelers on the Missouri River invariably made some observation about this important tributary. George Catlin was enthusiastic about the region and J. N. Nicollet described it in detail. On May 13, 1843, John James Audubon camped at the mouth of the Big Sioux while on his way to Fort Union. The evening was “dark and rainy”, with thunder and lightning in the distance. Audubon found the water of the Big Sioux clear and abounding with fish. Deer, bear, buffalo, wild turkey, geese, ducks, and other kinds of wild game were abundant. On the return trip on October 1st, Audubon landed below the Big Sioux to shoot turkeys, having seen a large gobbler on the bluffs.³⁶⁴

Settlement near the junction of the Big Sioux and the Missouri began late in the 1840's. William Thompson built a cabin near the mouth of the Floyd River in 1848. Theophile Bruguier, a French fur trader who married a daughter

The Big Sioux River

of War Eagle, settled at the mouth of the Big Sioux in May of 1849. Robert Perry arrived the same year and built a cabin on what is now Perry Creek. The growth of the town was slow prior to 1855, when a post office and land office were established.³⁶⁵

The arrival of the steamboat *Omaha* at Sioux City in 1856 with a cargo of provisions, lumber, drygoods, and hardware valued at \$70,000 stimulated the growth of the town. "Sioux City", declared a Dubuque editor in 1859, is "destined to become the largest city on the Missouri. Situated at the mouth of the Big Sioux River and the junction of the valley of that stream with the valley of the Missouri; at the point where the Central Pacific Railroad will cross that river, it must become the entrepot of the trade, as well as the market of Northern Nebraska including the Black Hill country and all the region drained by the Yellow Stone as well as the whole of Dacotah Territory. Its site possesses those commanding advantages and holds those commanding relations to the surrounding country, which mark out for it a first class position among western cities."³⁶⁶

Sioux City did, indeed, become the entrepôt for the Northwest. At this strategic point fur traders, soldiers, and settlers received their supplies. From this important port of call hordes of miners poured out to the Black Hills during the gold rush. From Sioux City went forth the hardy men who established Virginia City and other fabulous El Dorados in Montana. In 1870 Sioux City could count 3401 inhabitants; in 1880 the population was 7366, an increase of 116.6 per cent; in 1890 it had jumped to

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37,806, an increase of 413.3 per cent. No other Iowa town during that post Civil War period enjoyed such a phenomenal growth. In 1940 Sioux City counted 82,364 inhabitants. Only three Missouri River towns exceed Sioux City in size — Kansas City, Missouri; Kansas City, Kansas; and Omaha, Nebraska.⁸⁶⁷

There are other important cities in the valley of the Big Sioux. Sioux Falls, the largest city in South Dakota, with a population of 40,832 in 1940, is located on the river just above the Iowa-Minnesota boundary line. Watertown, South Dakota, with a population of 10,617 in 1940, is situated near the headwaters of the Big Sioux River. In addition to these, Hawarden, Rock Rapids, and Sibley are in the Iowa section of the Big Sioux Valley; Luverne, Jasper, and Pipestone in the Minnesota part of the valley; and Brookings, De Smet, Flandreau, and Madison are South Dakota towns in the valley.

Navigation of the Big Sioux has recently been described as "out of the question" by United States Army Engineers. While this statement is doubtless true, it is interesting to note that a number of steamboats explored the Big Sioux in pioneer days. In June, 1859, a party of forty-five ladies and gentlemen from Sioux City chartered the "elegant" ferryboat *Lewis Burnes* for a pleasure trip up as far as the mouth of the Rock River. After ascending about forty miles they found that it would require more time than had been estimated to reach their destination, so the excursionists returned downstream. According to the local editor, "All on board were apparently well pleased with the trip, and speak highly of the officers of the boat. The

The Big Sioux River

only obstruction to navigating the Sioux at this time is the mosquitoes. That the river is navigable for small steamers at least 100 miles, is beyond question, and at no distant day we hope to see a line of boats running between Sioux City and Sioux Falls.”³⁶⁸

The navigation of the Big Sioux was a challenge to other steamboat captains. On June 30, 1859, the *Sioux City Register* announced that the *Dakota City* would set out from the Dakota City and Sergeant Bluff landings on the morning of July 4th with a large party of ladies and gentlemen. It was the intention of those aboard to commemorate the “gellorious” day with a steamboat excursion up the Big Sioux. Apparently such exploits became widely known for the steamboat *Wave* left St. Paul, Minnesota, early in June with a cargo of freight for the Missouri and Big Sioux rivers. Unfortunately the captain fell overboard near Arrow Rock on the Missouri and was drowned. The cargo of the *Wave* was then transferred to the *Minnehaha* and the *Wave* returned to St. Paul. Whether the *Minnehaha* ascended the Big Sioux is not known.³⁶⁹

It was the custom of the Sioux City ferryboats to go up the Big Sioux River to secure wood for fuel. A heavy stand of timber apparently lined both banks of the stream. On June 21, 1872, about twenty-five ladies and gentlemen were invited by Colonel Sawyers to make such a trip on the *Undine*. The happy excursionists were well supplied with ice cream, strawberries, cake, and music. A month later the Congregational Sabbath School made an excursion up the Big Sioux on the *Undine*.³⁷⁰

The Big Sioux River drains a region rich in agricultural

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resources. It is just far enough east to avoid most of the climatic hazards to agriculture which prevail in the great plains country to the west. Its proximity to the dust bowl area is, however, reflected in its climate. The average annual rainfall in the State of Iowa is about 32 inches; whereas the annual precipitation near the source of the Big Sioux averages 22 inches, while the average at Sioux City is 28.88 inches. Fortunately about 78 per cent of the precipitation in the Big Sioux Valley occurs during the crop-growing season. The annual mean temperature for Iowa is 48°, but in the northern half of the Big Sioux Valley it is 42° and in the southern part 47°. The average growing season between killing frosts for Iowa is 156 days; the season in the Big Sioux Valley varies from 125 days in the north to 150 days in the south. Such variations clearly indicate that the Big Sioux Valley is not typical of the Hawkeye State when measured in terms of weather and agriculture.

Although the Big Sioux Valley is visited by "cyclonic rainstorms" as is the rest of mid-continental United States, the lighter annual rainfall reduces somewhat the damage from floods. The effect of precipitation is revealed in the variation of discharge at the mouth of the Big Sioux. United States Army Engineers estimate that this varies from fifteen cubic feet to 40,000 cubic feet per second with the average standing at about 2700 cubic feet per second. Because much of the country bordering the Big Sioux is low and flat, the run-off after heavy rains is relatively slow.

In spite of these conditions which tend to prevent floods, there were eleven major floods and eight lesser ones on the

The Big Sioux River

Big Sioux between 1900 and 1930. The flood damage on the Big Sioux is roughly estimated at about \$160,000 annually. "Local interests", declared Major General Lytle Brown, "have expended more than \$8,000,000 in constructing drainage ditches, clearing and straightening river channels, supplementary and diversion channels and building low levels. This has improved the drainage of nearly 900,000 acres of land and has considerably reduced flood damage." It was estimated in 1931 that the protection of 64,500 additional acres would cost \$7,600,000, averaging \$118 per acre. Since the annual flood loss was estimated at only \$2.05 per acre it was believed that additional expenditures for flood control were scarcely justified.³⁷¹

From the earliest times the Big Sioux has played a dramatic rôle in the history of this area. In prehistoric times many Indians occupied the valley: the largest known village site in Iowa has been discovered on a beautiful terrace overlooking the Big Sioux River in northwestern Lyon County. At Gitchie Manitou and the Pipestone quarries the red men worshipped. From the Big Sioux, braves sallied forth to hunt the buffalo or scalp some unwary enemy. On the bank of the Big Sioux ended the road of the French traders in early historic times. The Big Sioux formed the boundary between Indian tribes; it also served as a convenient line of demarcation when Indian cessions were made. Naturally the Big Sioux figured in both the Lucas boundaries proposed in 1844 and the State boundaries adopted in 1846.

After the departure of the Sioux from northwest Iowa in 1851, the Big Sioux Valley became the last frontier of

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settlement in the Hawkeye State. To this region trooped hundreds of foreigners in the decades following the Civil War — Germans, Scandinavians, Dutch, and English. Northwestern Iowa has a larger percentage of foreign-born population than any other part of the State. Despite blizzards and floods, despite the ravages of grasshoppers, the valley of the Big Sioux has flourished. In 1890 Lyon County had 8680 inhabitants; fifty years later 15,366 persons were recorded in the northwesternmost county of Iowa.³⁷²

Down the rivers, o'er the prairies,
Came the warriors of the nations,
To the Mountains of the Prairie,
To the great Red Pipe-stone Quarry.

By steamboat and covered wagon, on horseback or by means of the iron horse came immigrants from many States and nations to pioneer in the valley of the Big Sioux.

THE FLOYD RIVER

SCOFFERS at time and space were Captains Meriwether Lewis and William Clark. On May 14, 1804, these two intrepid Virginians, with a small party of hardy men, started up the turbulent Missouri River to explore the Louisiana Purchase at the command of President Thomas Jefferson. Battling their way up the snag-infested waters of the Big Muddy, Lewis and Clark were the first Americans to explore the river and what is now the western border of Iowa. During the course of their journey they kept accurate observations of their route, of the Indians encountered along the way, of the flora and fauna, the game, the minerals, the soil, and the climate. Three young soldiers — Charles Floyd, John Ordway, and Nathaniel Pryor — served as sergeants. Several French boatmen and interpreters, together with some half-breeds, accompanied the expedition. Among their many duties these men provided useful information concerning the rivers and streams they passed. On July 14th the expedition camped at the mouth of the Nishnabotna River. Four days later, on July 18, 1804, the explorers crossed what is now the Iowa-Missouri boundary and commenced toiling up the sandbar-studded river along the western border of Iowa.

For thirty-two days the Lewis and Clark party continued upstream, catching fish, killing deer, wolves, and other wild game, and treating with the Indians. Suddenly,

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as they were approaching the great bend below present-day Sioux City, Sergeant Floyd became very ill with "Biliose Chorlick". On account of his alarming condition the expedition remained in camp one day and the popular young soldier was given every attention. Nevertheless William Clark recorded in his journal on August 20, 1804: "Sergeant Floyd much weaker and no better. . . . We Set out under a gentle breeze from the S. E. and proceeded on verry well. Serjeant Floyd as bad as he can be no pulse & nothing will Stay a moment on his Stomack or bowels. Passed two Islands on the S. S. and at the first Bluff on the S. S. Serj. Floyd Died with a great deal of Composure, before his death he Said to me, 'I am going away I want you to write me a letter.' We buried him on the top of the bluff $\frac{1}{2}$ Mile below a Small river to which we Gave his name, he was buried with the Honors of War much lamented, a Seeder post with the (1) Name Serg^t. C. Floyd died here 20th of august 1804 was fixed at the head of his grave. This Man at all times gave us proofs of his firmness and Determined resolution to doe Service to his Countrey and honor to himself after paying all the honor to our Decesed brother we camped in the Mouth of floyds River about 30 yards wide, a butifull evening." ⁸⁷³

The basin of the Floyd River is wedged in between the Big Sioux, with its tributaries on the north and west, and the Little Sioux on the east. The Floyd River enters the Missouri River at Sioux City and embraces a portion of that city in its watershed. It is more than twice as long as the Soldier River and drains an area double the size of that stream. It is longer than the Rock River, the principal

The Floyd River

tributary of the Big Sioux. Its valley is dwarfed by that of the Big Sioux, however, being only one-tenth as large.

The Floyd River rises in the Iowan drift in northern O'Brien County at an elevation of over 1400 feet above sea level. It flows in a southwesterly direction for 101.5 miles, emptying into the Missouri at an elevation of 1090 feet. The lower four-fifths of its valley drains the Kansan drift which is overlaid with loess, giving the region a rich, deep soil. The maximum length of its basin is sixty-eight miles and the maximum width about twenty-three miles. The average slope of the valley is 5.1 feet per mile and the average fall of the channel is about four feet per mile. The topography of the country varies from gently undulating to fairly rolling. The climate is typical of the surrounding corn belt, being characterized by severe winters and hot summers. The average precipitation is about twenty-eight inches, or almost four inches less than the average for the State.³⁷⁴

Sergeant Floyd was the only man who lost his life on the expedition. He was also the first white man known to have died in Iowa: his grave was dug on the bluff overlooking the mouth of the Floyd River six years before Julien Dubuque was buried by the Fox Indians near present-day Dubuque. Although the other Iowa tributaries of the Missouri apparently had received their names prior to 1804, the Floyd River was named by Lewis and Clark. In 1900 a tall obelisk was erected at Floyd's grave in honor of him and the Lewis and Clark expedition. "Sergeant Floyd is our hero", declared the *Sioux City Journal* of August 21, 1900. "He is our pioneer soldier of the Louisiana Purchase.

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The shaft to his memory will be a shaft to the memory of many. It will be more than that. It will reflect the light of years and years to come and be a teacher to many generations.” ³⁷⁵

As the years passed, the Floyd River and the tomb of Sergeant Floyd became historic landmarks on the upper Missouri. Noted travelers, both American and foreign, called attention to this picturesque spot. Brackenridge and his companions paid an “involuntary tribute” to the “pretty little river” when they glided by in 1811. John Luttig passed by “floyds River” on July 7, 1812. “Floyd’s Grave”, George Catlin related in 1832, “is a name given to one of the most lovely and imposing mounds or bluffs on the Missouri River”. In the following year, on May 8, 1833, Prince Maximilian called attention to “Floyd’s Hill” rising “like the roof of a building” above huge poplar trees. A short distance up the Missouri from this point Maximilian observed Floyd’s River. Ten years later John James Audubon wrote, “This evening we came to the burial-ground bluff of Sergeant Floyd, one of the companions of the never-to-be-forgotten expedition of Lewis and Clark, over the Rocky Mountains, to the Pacific Ocean. A few minutes afterwards, before coming to Floyd’s Creek, we started several Turkey-cocks from their roost, and had we been on shore could have accounted for more than one of them.” ³⁷⁶

The beauty of the Floyd Valley was recognized by the early settlers. In 1859 a Sioux City editor declared that the valley of the Floyd was “one of the loveliest in the world. Commencing at the mouth of the river, just below our

The Floyd River

city, and progressing up the stream, the beauty of the scenery and the magnificent bottoms of land continually increase — the farther you go the more lovely it appears. No wonder this rich and beautiful valley is rapidly settling up with an enterprising class of farmers. The number of acres of corn, wheat, &c., under cultivation in the Floyd valley this season is very large, and should the season be propitious the farmers will have a large surplus to dispose of the coming fall.”³⁷⁷

Transportation and communication in the Floyd Valley was difficult in those early days. The small discharge of water and the steep slope of the valley thwarted any attempts to navigate the Floyd. Spring freshets continually carried away the first crude bridges. Even ferrymen had their troubles on the Floyd. “The flat boat used as a ferry across the Floyd sunk last Wednesday”, declared the *Sioux City Register* on April 5, 1862. “We are now without bridge or boat. Necessity is said to be the mother of inventions. Wonder what she will do for us this time?” The editor urged prompt action in erecting a bridge across the Floyd for the accommodation of local citizens.

Two months later the Woodbury County board of supervisors let the contract for bridging the Floyd and William H. Joy agreed to build a “good bridge” for \$400. He was to keep it in repair for three years and at the expiration of that time “give it to the County”. Other bridges were built but unfortunately most of these rickety structures were washed away by torrential rains that swept down the winding Floyd. The junction of State Highway 10 with Federal Highway 75 on the West Fork of

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the Floyd River is known locally as the "Million Dollar Corner". It is no misnomer, for the bridge at that place, extending over one of the sloughs that becomes a part of the West Fork in flood times, cost \$1,500,000.³⁷⁸

The difficulties encountered by Floyd Valley pioneers were numerous. When Neville Redmon arrived in Plymouth County in 1868 he settled in America Township. A single schoolhouse located a mile southwest of Le Mars served this eighteen-miles-square township. The nearest post office and blacksmith shop were located at Sioux City. Redmon had to drive more than twenty miles to get his plowshare sharpened and procure supplies of sugar, tobacco, and coffee. The most convenient crossing of the Floyd was over the temporary bridge near where Hinton is now located, but when the water was high Redmon had to follow the ridge road along the east bank until he reached the bridge on the old Dubuque and Sioux City government road.³⁷⁹

Raging floods, howling blizzards, and voracious grasshoppers plagued the pioneers of the Floyd Valley. Many were discouraged and returned to the east but the more stout-hearted clung grimly to their farms. American squatters were soon joined by settlers from other lands. To the Floyd Valley came Henry Hospers and his Dutch companions in 1869. To the rich rural country around Le Mars came English country gentlemen attracted there by William B. Close and his colonization company which advertised 500,000 acres of land in Plymouth County and the surrounding country in Iowa and Minnesota. In the wake of these groups came Germans, Swedes, Norwegians,

The Floyd River

Danes, Irish, and land-seekers from every quarter of the world. Towns sprang up in this fruitful valley — Sheldon, Orange City, and Le Mars being among the most populous. Western Union College, founded in 1900 at Le Mars, is but a single example of the cultural development of a region only two generations removed from the frontier.³⁸⁰

The Floyd Valley constitutes only 1.6 per cent of the total area of Iowa. It contains only two power plants above Sioux City — those located at Orange City and at Sheldon. Its average annual silt discharge into the Missouri is probably about 500,000 tons, equivalent to approximately two-tenths of one per cent of the silt discharged past Kansas City, Missouri. It contributes but slightly to the flow of the Missouri River. Although not a region of superlatives, the Floyd Valley is rich in agricultural resources. The Marshall silt loam is the most extensive soil and explains the fertility of the valley. Corn, oats, and hay are the three leading crops. Stock raising and dairying are also important industries: several large creameries are located in the basin. A rich soil, free from the heavy erosion so characteristic of other portions of the State, is typical of the Floyd River Basin. Iowans think well of this rich and historical little valley.³⁸¹

THE LITTLE SIOUX RIVER

THE Little Sioux occupies the largest Iowa river basin on the Missouri slope. It drains 7.3 per cent of the area of Iowa and fully one-fourth of the entire Missouri slope. Its watershed in Iowa is almost double those of the Big Sioux, the Rock, and the Floyd rivers, almost equal to those of the Iowa and the Skunk, and nearly equal in extent to the combined basins of the Wapsipinicon and the Maquoketa. No other Iowa tributary of the Missouri approaches the Little Sioux when measured by the size of its basin. Indeed, the valley of the Little Sioux is by no means insignificant; it embraces an area greater than the States of Delaware and Rhode Island combined and almost equal to that of Connecticut!

Rising at an altitude of 1405 feet above sea level in the swampy, glacial moraine country of southwestern Minnesota, the Little Sioux flows in a southwesterly direction to join the Missouri River almost midway between Sioux City and Omaha. The river is about 236 miles long, has a basin varying from thirty to eighty miles in width, and drains an area of 4260 square miles, 4065 of which are in Iowa. It joins the Big Muddy at an elevation of 1014 feet above sea level near the town of Little Sioux, falling less than 400 feet during the course of its journey. Its steepest descent is 2.6 feet per mile between Gillett Grove and Fostoria. The Little Sioux is, indeed, a typical prairie stream.

The Little Sioux River

Two major tributaries — the Maple River and the West Fork — account in some measure for the size of the watershed of the Little Sioux. Maple River, the only important eastern tributary, has its source in Buena Vista County and flows in a southwesterly direction through Ida Grove, Battle Creek, Danbury, Mapleton, and Turin, emptying into the Little Sioux a short distance below the latter town. The Maple drains an area of 777 square miles. The West Fork, with a watershed of 845 square miles, rises in northwestern Cherokee County near Marcus. After flowing through Merville, Climbing Hill, and Hornick, the West Fork joins the Little Sioux a few miles below the mouth of the Maple.⁸⁸²

Two other western tributaries are important. Ocheyedon River has its headwaters just south of Worthington, Minnesota, and empties into the Little Sioux at Spencer. It takes its name from Ocheyedon Mound — the highest point in Iowa and the southern extremity of Longfellow's "Mountain of the Prairies". Mill Creek, which joins the Little Sioux just north of Cherokee, is noted for the Mill Creek Indian culture which has been discovered along its banks. Twelve ancient village sites reveal this culture, four of them located on Mill Creek, five on the terraces of the Little Sioux, one on a broad hilltop adjoining the Little Sioux, and two on the terraces of Waterman's Creek. These sites indicate that the prehistoric villages bore a striking similarity to the Mandan villages of North Dakota and were probably Siouan in culture.⁸⁸³

Aside from the Missouri River itself, the Little Sioux was probably the earliest known Iowa stream on the Mis-

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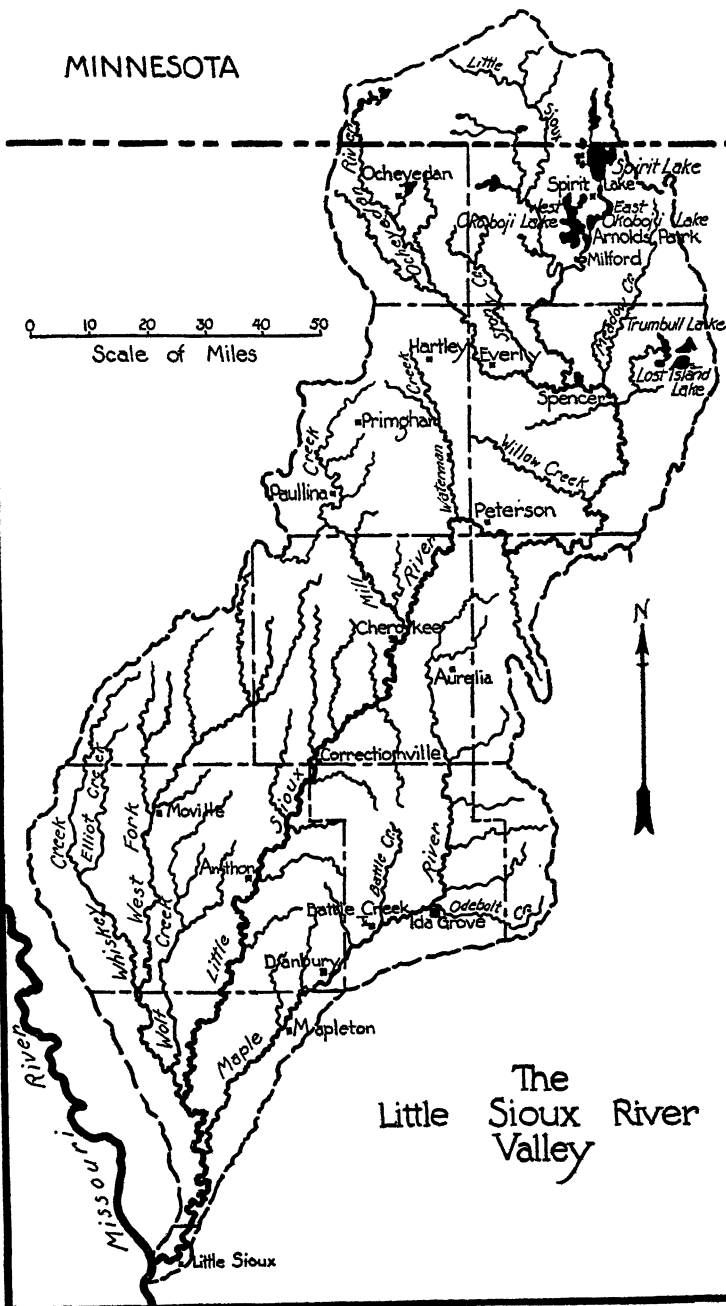
souri slope. William Delisle's map of 1703 showed the Little Sioux far more accurately than it does the Big Sioux. According to this map the "*R. des Aiaouez*" (as the Little Sioux originally was named) flowed from a series of lakes which could be no other than the Spirit Lake-Okoboji group. Delisle's map of 1718 was still better, showing the same river and lakes in proper relation to the Big Sioux and the Des Moines River. The "*Chemin des Voyageurs*" skirted the lower end of Okoboji and a "*Village des Aiaouez ou Paoutex*" (Iowa Indians) was located at this point. The Big Sioux was not clearly portrayed on a Delisle map until 1718.³⁸⁴

Additional information about the western border of what is now Iowa slowly accumulated. It was not until the Lewis and Clark expedition, however, that a detailed description was written about the Little Sioux. This expedition passed the mouth on the morning of August 8, 1804, and William Clark observed that the Sioux Indians called this stream the Eaneah Waudepon or Stone River while the French called it the "*Petite Rivere de Cuouex*" or Little Sioux River. The stream was "about 80 yards wide" at its mouth. Pierre Dorion, the Sioux Indian interpreter who accompanied the expedition, told Captain Clark that he had traveled to the headwaters of the Little Sioux and therefore knew that it ran "Parrelel to the Missourie some Distance" and was "navagable for Perogues". Its headwaters, he said, were "9 miles from the R Demoin" (Des Moines) and passed through a lake called "Despree" (Spirit Lake), "about 20 Leagues in circumfrance".

Captain Clark went ashore to hunt at the mouth of the

MINNESOTA

0 10 20 30 40 50
Scale of Miles



The
Little Sioux River
Valley

Iowa: The Rivers of Her Valleys

Little Sioux. According to his journal: "I took one man and went on Shore the man Killed an Elk I fired 4 times at one & did not kill him, My ball being Small I think was the reason, the Musquitors so bad in the Praries that with the assistance of a bush I could not keep them out of my eyes, the boat turned Several times to day on Sand bars. in my absence the boat passed a Island 2 Miles above the litle Scouix R on the upper point of this Isld Some hundreds of Pelicans were collected, they left 3 fish on the Sand which was very fine, Cap Lewis Killed one, & took his dimentions, I joined the boat and we Camped on the S. S. worthie of remark that Snakes are not plenty in this part of the Missourie." ⁸⁸⁵

A score of notable travelers passed the mouth of the Little Sioux. On July 2, 1812, John Luttig and his Missouri Fur Company traders camped at the mouth after cordelling twenty-three miles upstream that day. Game apparently was plentiful in the vicinity for the hunters killed four deer and one duck. ⁸⁸⁶ When John James Audubon passed on May 12, 1843, he lamented that although the Little Sioux had once abounded with "Beavers, Otters, Muskrats, etc.," it was at that time "quite destitute of any of these creatures." Upon his return, however, Audubon found wild game plentiful in the vicinity. "Saw three Deer on the bank", he recorded. "A Prairie Wolf travelled on the shore beside us for a long time before he found a place to get up on the prairie. Plenty of Sandhill Cranes were seen as we passed the Little Sioux River. Saw three more Deer, another Wolf, two Swans, several Pelicans, and abundance of Geese and Ducks." ⁸⁸⁷

The Little Sioux River

Stephen Watts Kearny noted geese, ducks, and turkeys in abundance near the Little Sioux in 1824. Like other travelers, he was appalled at the difficulty of ascending the Missouri above the mouth of the Soldier River. A swift current combined with snags and driftwood made navigation hazardous as Kearny passed the Little Sioux and approached Blackbird Hill. Prince Maximilian noted the "brackish taste" of the water of this and other prairie streams during low water. When Captain James Allen and his dragoons forded the Little Sioux in 1844, he described it as a "clear, pretty stream" whose banks were "bordered with narrow groves of large timber, cotton-wood, walnut, oak, &c." ³⁸⁸

It is in the main stream of the Little Sioux that Iowans are primarily interested. Since its valley forms such an important part of the Missouri slope in Iowa, State Geologist Charles A. White devoted considerable attention to it in his report of 1870. The upper reaches of its branches — the West Fork and the Maple — he dismissed as "mere prairie creeks" in the "Drift Deposit". The upper branches of the Little Sioux itself did not differ from its tributaries although the stream did become deeper and wider upon entering Clay County. Moreover, the river gradually increased in size as it turned southward into Cherokee County. Upon entering the "Bluff Deposit", the Little Sioux Valley assumed a "billowy appearance" until it reached the valley of the Missouri. At this point, like similar streams along the western border of Iowa, the Little Sioux became a "narrow, sluggish ditch" which was "frequently filled with back-water" of the Missouri. "The

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Missouri river", White explained, "in former times ran along the foot of the bluffs on the Iowa side of its valley, where traces of its channel still remain. The Little Sioux now flows along a portion of the old channel of the great river, where it unites the West Fork, the Little Sioux, and Maple rivers into a common channel as they successively come down upon the uplands. Formerly these were independent streams and each emptied directly into the Missouri river."

The river valleys of the Missouri slope contain many evidences of the glacial period. "After crossing the Des Moines river", White reported in 1870, "we find, in western Iowa, a variety of boulders that do not appear at all in eastern Iowa. These are of red quartzite, identical with the Sioux quartzite, and are distributed, in connection with the common granite boulders, from the northern to the southern boundary of the State." ³⁸⁹

One of the most remarkable glacial boulders in Iowa is "Pilot Rock" in the Little Sioux Valley in Cherokee County. When J. P. Bushnell, Commissioner of Immigration for Iowa, prepared a booklet on the resources and industries of Iowa in 1885, he called attention to these "conspicuous objects" which the early settlers called "lost rocks". "They vary in sizes from small fragments that a man may lift to masses of fifty or more tons in weight", Bushnell wrote. "I measured one in Cherokee county and found it to be sixty feet in length and forty feet in width, with about twenty feet of this thickness exposed above the surface of the ground. It lies upon one of the elevations bordering the Little Sioux River, and is so conspicuous an

The Little Sioux River

object that from the earliest settlement of that region it has been known as 'Pilot Rock.' This rock, in its composition, is what is known as red quartzite, identical with that found 'in place' far up on the Big Sioux River. Boulders of this composition largely predominate in the western part of the State."⁸⁹⁰

The first spray of immigration entered the Little Sioux Valley during the eighteen fifties, but so far as actual settlement was concerned much of the valley formed a part of the last frontier line in Iowa. When John G. Wells published his *Pocket Hand-Book of Iowa* in 1857 he observed that such "unsettled" counties as Monona, Cherokee, Buena Vista, and Clay were drained by the "Inyan Yankey" or Little Sioux River.⁸⁹¹

When J. A. Kirchner and his brother Jacob arrived in Clay County in 1855, they found they could not cross the Little Sioux River, and so they carefully examined the land on the east side and decided to stake out a claim. With the arrival of more settlers the town of Peterson was formed. The Milford Emigration Company of Massachusetts opened settlement of Cherokee County in 1856 on an extensive tract which included timber land along the Little Sioux. During the same year Charles E. Whiting and his two brothers bought several thousand acres of choice land eight miles northwest of Onawa which formed the basis of the Whiting Settlement which has been described as the "most beautiful" and most nearly "ideal" farm land in the United States. The town of Onawa was laid out by the Mormon Land Company in 1857 on the ridge separating the valley of the Little Sioux from the Missouri bottoms.

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In the spring of the same year John W. Tucker built a rude cabin on the Little Sioux near present-day Sioux Rapids in Buena Vista County, and a year later Luther H. Barnes platted the town.⁸⁹²

The pioneers in these scattered settlements were terrorized in the spring of 1857 by Inkpaduta and his marauding band of renegade Sioux Indians as they advanced up the Little Sioux Valley from Smithland to Lake Okoboji. Cattle and hogs were shot, cabin doors torn from their hinges, food and clothing stolen, and settlers threatened with death. The depredation finally ended in the Okoboji-Spirit Lake region where thirty-two men, women, and children were massacred. Two captive women were later killed and two others were ransomed after harrowing experiences. The Spirit Lake Massacre was the bloodiest Indian episode in Iowa history.⁸⁹³

Game was plentiful in the valley of the Little Sioux and the streams were well stocked with fish. The early pioneers have left some whopping fish stories about the Little Sioux. Henry Herring was said to have set out a trot line of bed cords in 1857 just below the mouth of the Little Sioux and caught something that appeared to be as big as a cottonwood tree but which proved to be a catfish weighing 130 pounds. The monster was alleged to have accompanied Lewis and Clark up the Missouri! Opposite the mouth of the Little Sioux, another Harrison County pioneer, David Gamett, caught a "whale of a catfish", so large that the assistance of several strong men was required to land it. The fish weighed 143 pounds. Just below the Scofield dam at Little Sioux, James Henderson caught a catfish that had

The Little Sioux River

swallowed a drowned dog. This fish when cleaned weighed 125 pounds. Fishing is still good in the Little Sioux Valley. From the head of Spirit Lake truck loads of carp from privately stocked ponds are carried to New York, Boston, and other eastern cities.³⁹⁴

When Rufus Blanchard issued his *Hand-Book of Iowa* in 1867, he stressed the "remarkable equality" with which rivers were distributed throughout the State. Sawmills and gristmills were already erected on the Little Sioux and adjacent streams in Harrison County. In Monona County there were "extensive bottoms" as well as good water-power sites and groves. Blanchard found stock-raising very general. The price of school land ranged from \$1.25 to \$5.00 an acre; prairie land from \$2.50 to \$10.00; and timber and unimproved land, \$1.25 to \$5.00. Indeed, better grade timber land might command up to \$10.00.

After traversing the countryside and consulting the books and maps of the Sioux City Land Office, Blanchard was in a position to make an appraisal of the region. "This whole country", he concluded, "only lacks one thing to make it as desirable as other portions of the State in agricultural value, that is: timber. Small groves are found on the Big and Little Sioux rivers and also around Spirit Lake, and in a few other portions. The whole balance consists of rolling prairie, very hilly in places, with a good soil, dry and healthy, with but few exceptions. The bottoms on the streams are considered the best grass lands in the West. . . . Large amounts of choice lands are yet open to pre-emption and homestead location in this district and it will only be a few years till this whole country will be dotted over with

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thousands of little prairie farmhouses, each shaded by an artificial grove of the ever ready cottonwood." ⁸⁹⁵

The rapid development of the Little Sioux Valley and western Iowa amazed the Reverend M. Cohen Stuart in 1873. A delegate from Holland to the sixth conference of the World's Evangelical Alliance in New York City, Dr. Stuart came west to visit the Dutch settlements at Pella and Orange City in Iowa. He found the "village of Cherokee" a "prosperous" town. Two years before Cherokee had "hardly four log houses" but when Dr. Stuart passed through, it boasted a "fine church" and a large "College" building with broad wings and neat towers. The growth of towns in the Little Sioux Valley in the decades following the Civil War was almost phenomenal. ⁸⁹⁶

The valley of the Little Sioux is rich in history. In 1820 Captain Matthew J. Magee led a small force of United States troops up the valley on their way to Camp Coldwater at the mouth of the Minnesota River. Stephen W. Kearny accompanied the expedition and kept a daily journal. He saw a herd of "probably 5 thousand" buffalo and also noted many deer and elk in the Little Sioux Valley. ⁸⁹⁷

The Little Sioux formed a boundary for several Indian treaties involving the Missouri slope in Iowa. Three of the five Iowa stockades established during the Sioux outbreak of 1862 in Minnesota were located on the Little Sioux at Correctionville, Cherokee, and Peterson. For a decade the region suffered from the ravages of grasshoppers. Neither storms nor drouth, neither marauding Indians nor hungry grasshoppers, however, could break the spirit of the pioneers of the Little Sioux Valley. Sturdy Americans and

The Little Sioux River

foreigners — English, Irish, Dutch, Swedes, Norwegians, Danes, and Germans — came by the thousands. Their confidence in the region was not misplaced; during the World War land in northwest Iowa sold for over \$500 an acre.³⁹⁸

The valley of the Little Sioux is, indeed, one of the richest garden spots in Iowa. The Spirit and Okoboji lake region constitutes one of the most attractive vacation areas in the State. Five State Parks — Pikes Point, Gull Point, Pillsbury Point, Mini-Waken, and Orleans — offer every variety of relaxation and entertainment. In addition there is Trappers Bay Park on Silver Lake, Mill Creek Park near Paullina, and Wanata State Park near Peterson. The people of the Little Sioux Valley can point with pride to the Clay County Fair, which claims to be the largest county fair in the United States. The Pilot Rock Plowing Match Association held its thirty-third annual contest in 1940. Such activity is popular in the Little Sioux Valley: Calumet has its Pancake Day; Ida Grove has its annual Dutch and Scotch reunions.³⁹⁹

Although there are no colleges located in the valley of the Little Sioux, the citizens take a deep interest in education. The public schools are good and well supported. Because the valley is distinctly rural in character the people participate in the activities of agricultural organizations. Nor are the spiritual needs of the region neglected; the enthusiastic attendance at the Methodist Camp on Lake Okoboji each year gives ample testimony of the character of the inhabitants of the Little Sioux Valley.

THE SOLDIER RIVER

THE Soldier River has the smallest valley on the Missouri slope in Iowa. Wedged in between the Little Sioux and the Boyer rivers, the Soldier rises in Ida County and flows for seventy-two miles past such towns as Ute, Soldier, Moorhead, Pisgah, and Mondamin. It drains a basin of 425 square miles, less than one per cent of the area of the State. The average width of the basin is about eight miles. The valley is entirely within the loess-covered Nebraskan glacial-drift area. Its small size and location have led some engineers to believe that the Soldier River may once have been a tributary of the Little Sioux. The Soldier formerly emptied into the Missouri River about two miles west of Modale, but in recent years a cut-off has been constructed north of Mondamin and the stream now empties into the Big Muddy some eleven miles above its former confluence.⁴⁰⁰

Historians of Harrison County assert that the Soldier River was so named from the fact that a company of United States troops encamped on its banks in the fall of 1846.⁴⁰¹ This explanation, however, is not supported by corroborative evidence. Although the river was not shown on William Delisle's map of 1718, it was named before the Lewis and Clark expedition of 1804. Perrin du Lac, a venturesome Frenchman who made several excursions into upper Louisiana in the years 1801, 1802, and 1803, desig-

The Soldier River

nated it "*R. des Soldats*" on his map of 1802. Since Perrin du Lac located or mentioned rivers as far up the Missouri as the Yellowstone, he must have been fairly familiar with the region.⁴⁰² No one knows precisely who named the Soldier River, but probably some fur trader venturing up the Missouri in the years following the American Revolution first applied that title.

It was Lewis and Clark who gave the first detailed account of the Soldier River. In his journal for August 6, 1804, William Clark recorded: "At twelve oClock last nigh[t] a violent Storm of wind from the N. W. Some rain, one p^r. of colours lost in the Storm from the bige Perouge. Set out early and proceeded on passed a large Island on the S. S. back of this Is^d. Soldiers River Mouths, I am told by one of the men that this river is about the size of Nadawa [Nodaway] river 40 yards wide at the mouth." Clark estimated that the Soldier River was located 689 miles above the mouth of the Missouri, modern measurements place this distance at about 678 miles.

The Soldier River was mentioned by other members of the Lewis and Clark expedition. Captain Lewis wrote in his "Summary View" of the rivers and creeks discharging into the Missouri: "Leaving the council Bluff and ascending the Missouri 39 miles we arrive at the mouth of Soldier's river 30 yards wide. it heads with the river Demoin, and passes to the Missouri through an open, level and fertile country. is navigable for perogues a considerable distance." Sergeant Charles Floyd recorded a "villant Storm of wind and Rain" one night, after which the expedition set out at an "erley ouer" and passed a creek "Called Sol-

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diers Creek". Members of the party heard the whippoorwill in that vicinity.

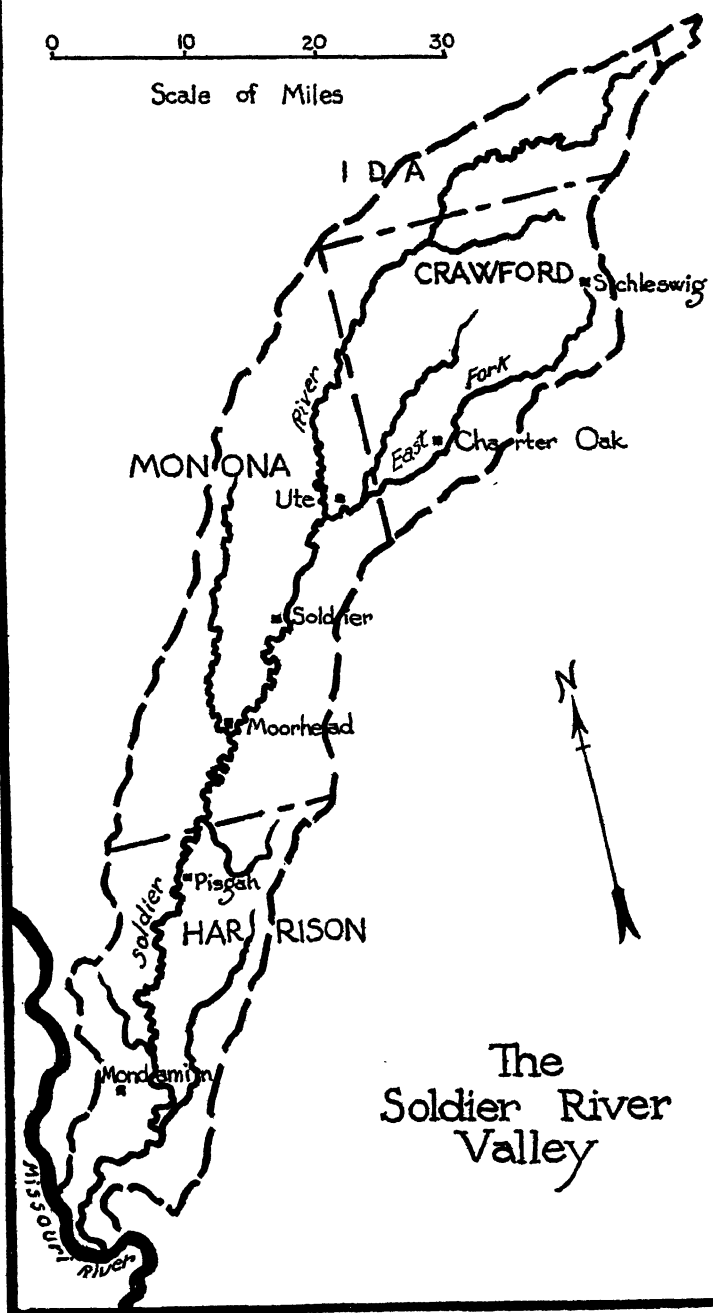
Sergeant John Ordway called attention to the "Soldiers R" which he found "as big as the Nardaway R. at the mouth". On the return of the expedition in 1806, William Clark sent out all the hunters on the bottom land "a little above the Soldiers river". They quickly killed "3 Elk" which were at no great distance. Clark had the meat brought into camp and cooked. "Sergt. Ordway came up", Clark related, "& after takeing a Sumptious Dinner we all Set out at 4 P.M. wind a head as usial." Although small in size, it appears that the Soldier River received its full share of attention in the journals of the Lewis and Clark expedition.⁴⁰³

Later travelers also recorded their impressions of the Soldier River. Henry M. Brackenridge passed the mouth of a "small stream" called the "Soldier's river" on May 15, 1811. The Missouri went around a big horseshoe bend just below this point, and Brackenridge said that it was necessary to travel "twelve miles around, and not more than three hundred paces across."⁴⁰⁴ John C. Luttig sailed past the mouth of Soldier River on July 1, 1812. "Missouri very crooked," he recorded, "no hunters out, distance 34 Miles, saw some Elk." According to Stephen W. Kearny, Brigadier General Henry Atkinson's expedition of 1824 ran into a strong current, driftwood, and hard winds as they passed the mouth of the Soldier River.⁴⁰⁵

On May 5, 1832, Maximilian and his companions were dismayed when the steamboat *Yellowstone* ran aground just below the Soldier River "at a dangerous place, where

0 10 20 30

Scale of Miles



The Soldier River Valley

Iowa: The Rivers of Her Valleys

the left bank was blocked up with many snags, and which is called the Devil's Race-ground." Happily, the steamboat sustained no injury. "The country was low and uniform till we again reached the hills, which were rather bare of wood, but of grotesque form, and covered with a fine verdant carpet. Near the mouth of the Soldier River, an *engagé* met us, who brought letters from the Assiniboin steamer." Upon the return of the Maximilian party in the following May, the steersmen of the Mackinaw boat "lay-to in a safe bay on the left bank" at the Soldier River.⁴⁰⁶

Such were the descriptions of the Soldier River by voyagers on the Missouri. Those who traveled overland also left accounts of the little stream. Stephen W. Kearny was impressed with the scarcity of timber as he rounded the headwaters of the Soldier River in 1820 with Captain Matthew J. Magee's troops. Game was plentiful, elk and buffalo being almost constantly in view. In 1844 Captain James Allen found the "Soldier's" river "slightly skirted" with good timber. The soil of the prairie through which it flowed was rich. "Many little deep brooks, with muddy banks," that had to be crossed "seldom show timber enough to make bridges over them", he complained.⁴⁰⁷

The Soldier River was recorded on virtually all good maps following the Lewis and Clark expedition — William Clark's map of 1810, Arrowsmith's map of 1814, and Albert M. Lea's map of 1836.⁴⁰⁸ In 1857 John Wells called attention to the Soldier River in his *Pocket Hand-Book of Iowa*. He optimistically asserted that the river would furnish a "good supply of water-power". William D. Wilson was delighted with the beautiful bottom lands along the

The Soldier River

headwaters of the Soldier. "The channels of these streams are quite deep, and very difficult to cross except on bridges", he reported. "Between these streams the lands are rough, broken, and not very desirable."⁴⁰⁹

Aside from the challenge regarding the origin of its name, history itself is not written large in the story of the Soldier Valley. There is not a single town in the valley with a thousand inhabitants: Charter Oak, Schleswig, and Ute all had populations less than 800 in 1940. The identification of the valley with early Mormon history of western Iowa is commemorated in Preparation Canyon State Park and the town of Pisgah. Though short on history, the Soldier River is long on scenery. The beauty of the valley is believed by some to be almost without a parallel on the Missouri River slope.⁴¹⁰

THE BOYER RIVER

THE origin of the name of the Boyer River, like that of the Soldier, is shrouded in mystery. The Boyer is not located on William Delisle's map of 1718, on John Mitchell's map of 1755, or on William Faden's map of 1777. Neither does the map of 1778 accompanying Jonathan Carver's *Travels* contain any reference to the Boyer or its neighboring streams in southwestern Iowa. Even as late as 1794, when the London firm of Robert Laurie and J. Whittle published "A New Map of North America", not a single river in western Iowa was named below the Little Sioux. One stream was indicated in the vicinity of the Soldier and Boyer rivers, but it would be sheer guesswork to assume that it was intended to be either.

Yet the name of the Boyer River was familiar to Lewis and Clark when they passed that way in 1804. Sometime between 1794 and 1804 (if not before) the Boyer must have become known to the Spanish and French fur traders who were penetrating farther up the Missouri River each year. Indeed, Laurie and Whittle had the following legend inscribed below their unnamed river in 1794: "The French ascend the River Missouri thus high". And Perrin du Lac, who preceded Lewis and Clark up the Missouri, referred to the Boyer as the *Rivière à Boyer*. Since there were many Boyer families in Missouri, the stream may well have been named for one of them. It should be pointed out,

The Boyer River

however, that Boyer was spelled "Bowyer's" on Samuel Lewis's map of 1804 and William Clark's map of 1810. It was also frequently printed as "Bayer's", "Rowyer's", and "Rogers". Whatever its origin, the Boyer River was well known to travelers and cartographers after 1804.⁴¹¹

The Boyer River rises near Storm Lake in Buena Vista County at an elevation of 1440 feet above sea level. After pursuing a southeasterly course to a point just west of the town of Wall Lake, the stream swerves in a southwesterly direction, debouching into the Missouri River about five miles below the town of Missouri Valley at an elevation of about 980 feet. The Boyer is 123 miles long and drains an area of 1135 square miles — two per cent of the area of Iowa. Its principal tributary is the sixty-mile long Willow River. The basin of the Boyer is larger than that of the Upper Iowa and almost three times as large as the Soldier Valley. The river has been described by United States Army Engineers as a "drainage ditch" throughout nearly two-thirds of its length, and yet this humble "ditch" drains an area greater than the State of Rhode Island! The Boyer has cut a deep channel through the loess and very ancient glacial drift through which it flows.⁴¹²

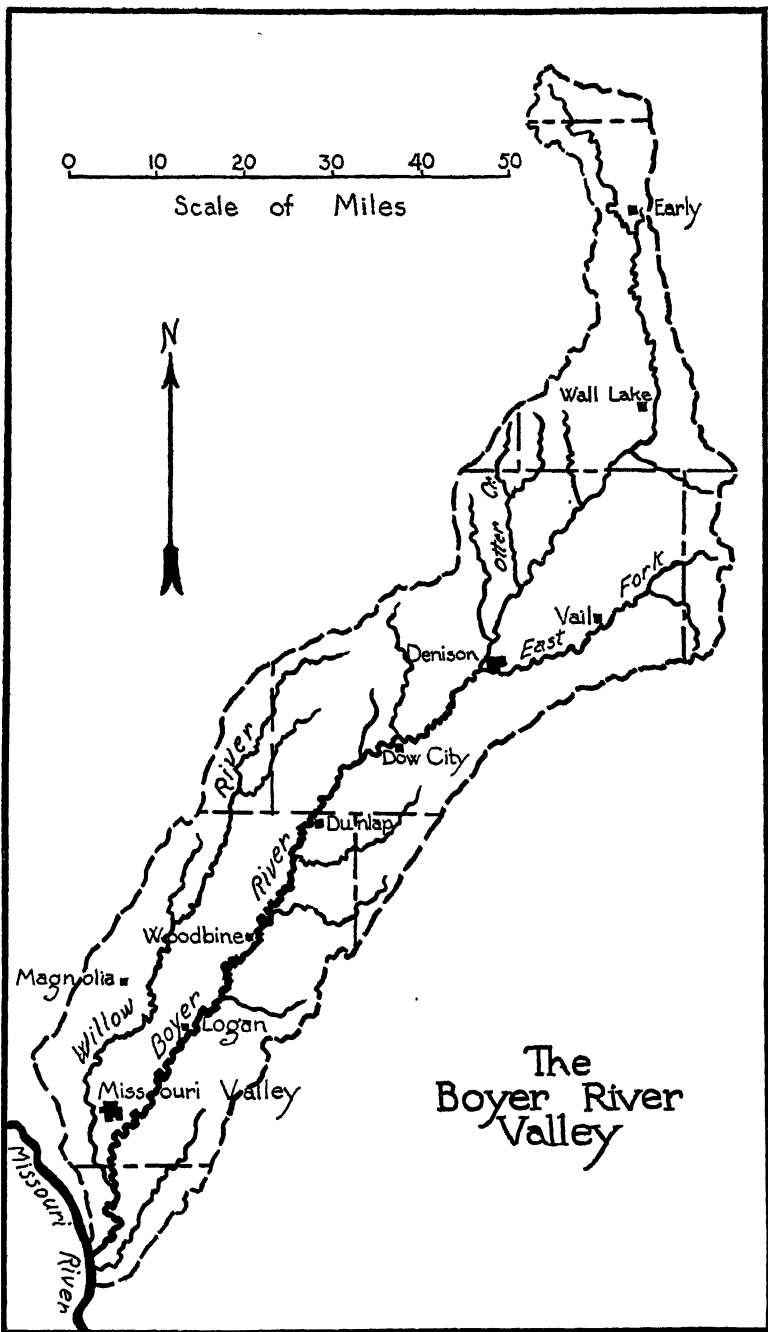
Many notable men are associated with the early history of the Boyer. On Sunday, July 29, 1804, William Clark observed the "Boyers R." flowing into the Missouri from the east. Clark estimated the stream to be twenty-five yards wide at its mouth. A hunter let his gun fall into the Boyer while attempting to cross it on a log but another man dove in and recovered it. Just below the Boyer the expedition halted to dine. "In a few minits," Clark re-

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corded in his journal, "Cought three verry large *Cat fish* one nearly white, those fish are in great plenty on the Sides of the river and verry fat, a quart of Oile Came out of the surpolous fat of one of those fish".

Other members of the expedition also left their impressions of the Boyer River. Sergeant Floyd estimated the mouth of the "Boyers River" to be thirty yards wide. Captain Lewis observed that the "Bowyer's" was "navigable for perogues some distance" and that it passed through a country "tolerably fertile, with but little timber." Twelve miles above this stream was "Council Bluff" in Nebraska, which Lewis and Clark recommended as "an eligible position for a trading establishment". After passing along a "large bottom prairie", Sergeant John Ordway and his men crossed "Boyer Creek" to some high land and dined on jerked meat. "Willard sent back to last nights camp for his Tommahawk which he left", Ordway related, "we Delayed about 2 hours, caught Several of the largest cat fish we have ever caught in this River. . . . The Timber mostly cottonwood except on the hills which is oak Black Walnut hickery Elm Basswood & C." Such were the scenes and incidents along the Boyer as related by the chroniclers of the Lewis and Clark expedition.⁴¹⁸

While hurrying up the Missouri to overtake Wilson Price Hunt's party, Manuel Lisa was informed that the Astoria expedition had encamped at the mouth of "Boyer's" on May 2, 1811. Lisa's men sailed by "the river *a Boyer*" under a "fine breeze" on May 13th, observing a deserted winter trading post at its mouth as they glided along. This post had been used by Robert McClellan and



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Ramsey Crooks and was often referred to by either man's name. Both began trading on the Missouri River shortly after the transfer of Louisiana at St. Louis in 1804.⁴¹⁴ In 1812 John C. Luttig ascended the "zick zack" Missouri past the Bojé (Boyer) River.⁴¹⁵

The fullest accounts of the Boyer River were furnished by members of the Stephen H. Long expedition up the Missouri on the *Western Engineer* in 1819. Long went into winter quarters at Engineers Cantonment "on the west bank of the Missouri, about half a mile above Fort Lisa, five miles below Council Bluff, and three miles above the mouth of Boyer's river." The following spring Edwin James, a scientist who accompanied Long, set out with three men in a small rowboat to explore the Boyer. They found the highest bluffs across the bottom lands from the cantonment were 350 feet above the low water mark of the Missouri. The "gyratory motion" of flocks of sandhill cranes were particularly interesting to the scientist as he rowed up the river. Although it was only April 13th, mosquitoes had already made their appearance. "The creek was found to be very tortuous," James related, "and the navigation much impeded by fallen trees, extending in various directions across the stream, obliging us to resort to the use of the axe in many places, to obtain a passage for our boat. In the evening we arrived at the bluffs. The water had now become so shallow as not to admit of our further passage with the boat". They accordingly proceeded on foot up the Boyer Valley through a "tolerably fertile country" flecked with "small assemblages of trees". Rattlesnakes were numerous and a number were killed.

The Boyer River

After six days of exploring on the Boyer they returned to Engineers Cantonment. James learned that the land between the Little Platte and the Boyer was a favorite hunting ground of the Oto Indians. The Ioway Indians also liked to hunt on the Boyer; Chief Hard Heart had gone with his family to the headwaters of the stream and trapped sixty beavers in a short time.⁴¹⁶

Equally as important as the observations of Edwin James were the notes kept by Captain Stephen W. Kearny while accompanying Captain Matthew J. Magee and his men on their overland expedition up the Boyer in 1820 from Engineers Cantonment to what is now Fort Snelling on the Mississippi. Captain Magee acted upon instructions from the War Department transmitted by Major Long. The expedition left Engineers Cantonment on July 2, 1820, and descended the Missouri to the Boyer, landing on the eastern bank of that stream a mile above its mouth. Plodding across the low bottom land, the troops ascended a hill and marched northward along the high dividing ridge between the Boyer River and Pigeon Creek. Early on the morning of July 4, 1820, the men left their camp near present-day Logan, traveling over "rolling prairies, but indifferently watered". They halted after a twenty-mile tramp near the present site of Dunlap. According to Kearny, the "Bowyer is but thinly clothed with wood, tho' frequently the highlands in the rear are well covered. The day cool & pleasant, & wind North East. This day being the anniversary of our Independence, we celebrated it, to the extent of our means; an extra gill of whiskey was issued to each man, & we made our dinner on pork & bis-

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cuit & drank to the memory of our forefathers in a *mint julup*." This was not only the first Fourth of July celebration in the Boyer Valley but probably the first such celebration throughout the entire Missouri slope of the Hawkeye State.

The next morning the troops were off at seven o'clock. At one o'clock they forded the Boyer River near present-day Dow City, and marched northward over a "continuation of very high, broken hills, with no timber, & but indifferent soil" to a small creek near where Denison is now located. The night was cool and Kearny found three blankets "by no means uncomfortable". Swarms of mosquitoes proved very troublesome despite a mosquito net. Deer, elk, and buffalo were encountered, but timber could not be seen anywhere. On July 7th they left the Boyer Valley, passed the head of the Soldier River, and entered the valley of the Little Sioux. The expedition of 1820 is one of the most important episodes in the early history of the Boyer Valley.⁴¹⁷

Other travelers have left their impressions of the Boyer River. In 1832 Maximilian noted that the Omaha Indians lived on both sides of the Missouri from the Boyer to the Big Sioux. Audubon found the entire region teeming with deer, elk, buffalo, and prairie wolves. A myriad of birds darted hither and yon as he proceeded up the Missouri in the vicinity of the Boyer. Geese, herons, red-winged starlings, cowbirds, crows, blackbirds, a great many Baltimore orioles, the swallow-tailed hawk, the yellow red-poll warbler, the field sparrow and the chipping sparrow, the magpie, and the finch were all identified by the great naturalist.

The Boyer River

Robins were "very scarce" but parrakeets and wild turkeys were plentiful.⁴¹⁸

The red man did not relinquish his claim to the Boyer Valley and the Missouri slope until 1846, the year Iowa became a State. Even after that the Indians continued for some years to trap on the headwaters of the stream. In October of 1852, for example, a band of Sioux attacked and robbed a family on the Boyer River, taking a young man and woman captive. As soon as this outrage was reported to the garrison at Fort Dodge, a detachment of troops was sent out and soon overtook the marauding redskins. Two chiefs — Inkpadutah and Umpashotah were held as hostages for about ten days until the prisoners were surrendered and the stolen property returned to the military authorities.⁴¹⁹

The first occupation of the Boyer Valley occurred in the late forties with the advent of a few squatters, but real settlement did not begin until the organization of Harrison County in the fifties. Thereafter growth was slow but steady. Many of the modern towns did not begin to prosper until the construction of the North Western Railroad down the Boyer Valley in 1866. At Logan the first cabin was built in 1852 and a gristmill was erected in 1856, but the town itself was not platted until 1867. Meanwhile, the town of Magnolia served for a score of years as the county seat of Harrison County. In 1875, however, Logan wrested this coveted honor from Magnolia. The advantages of Logan's site had been early recognized by many pioneers who considered the land along the Boyer River to be the "Eden" of Harrison County. Standing on the bluff over-

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looking the "matchless" Boyer Valley at Logan, a visitor compared the scene to the "plains and groves of Palestine." ⁴²⁰

Editors of early gazetteers thought highly of the valley of the Boyer. In 1857 John Wells asserted that the river offered "great facilities" for water power. Rufus Blanchard declared that Crawford County was "amply watered" by the tributaries of the Boyer. The town of Denison was "rapidly growing in numbers and wealth" because of its strategic location on the Boyer River. In 1865 William Wilson praised the "good water powers" on the river above and below Denison, and subsequent writers were optimistic concerning the prospects of the valley. ⁴²¹

Although no large cities are located on the Boyer River, no Iowa stream of similar length is bordered by a more flourishing group of towns than those in the lower part of the valley. The largest city is Denison with a population of 4361 in 1940. It was founded by a retired Baptist preacher named J. W. Denison who came to Iowa in 1855 as agent of the Providence Western Land Company. The second largest city in the basin is Missouri Valley, with 3994 inhabitants in 1940. Located a short distance above the confluence of the Willow and the Boyer rivers, Missouri Valley was founded by H. B. Hendricks in 1854. Logan, Woodbine, and Dunlap are all situated on Federal Highway No. 30 between Missouri Valley and Denison. Directly to the north of Denison are Odebolt, Early, and Wall Lake, perched on the rim of the Boyer River basin. ⁴²²

Such is the transformation that has occurred in the twelve decades since Stephen W. Kearny chronicled the

The Boyer River

march of the United States troops up the Boyer Valley in 1820. Then it was an uninhabited wilderness; now 95 per cent of the land is devoted to farming and the remainder is in urban communities. Then the Indians trapped game in the valley; now 70 per cent of the land is devoted to cash grain crops with corn as the principal product. Then United States troops toiled overland on horseback or on foot, thankful if they made twenty miles a day; now streamlined automobiles and the North Western diesel-engined trains transport passengers through the Boyer Valley at the rate of twenty miles in as many minutes. In 1819 the people of the United States were astonished when the steamboat *Western Engineer* succeeded in churning up the Missouri River to the mouth of the Boyer; in 1927 they were equally surprised when a native son, Clarence D. Chamberlin of Denison, flew the Atlantic from New York City to Germany.⁴²³

Amid such wonderful changes it is not surprising that persons born and reared within this beautiful valley should look back with sentimental yearnings upon their yester-years. Newell Dwight Hillis, for example, while a pastor of the Plymouth Church in Brooklyn, paid a fitting tribute to his birthplace of Magnolia in the valley of the Boyer. "Since those far off days", Hillis declared, "I have seen many cities and countries, and studied and lingered in many libraries, colleges and universities. I owe an immeasurable debt to certain great books, to noble authors and educators. But my chief intellectual debt is to my father and mother and sisters and to the old friends and students in the old Magnolia high school."⁴²⁴

THE NISHNABOTNA RIVER

"THERE are few rivers of importance in the western portion of the State. We mention the GREAT SIOUX RIVER, the SMALL SIOUX, and the NISHNABOTOMY." This information was given to immigrants in a ten-page booklet issued by authority of the State of Iowa in 1861.⁴²⁵ Printed on the eve of the Civil War, when settlement was still sparse in western Iowa, this characterization of the principal rivers on the Missouri slope was remarkably accurate. The Nishnabotna is the third largest stream on the Missouri slope, ranking next to the Big Sioux and the Little Sioux in size. Since the Big Sioux drains only a small portion of Iowa, the Nishnabotna possesses the second largest watershed on the Missouri slope in Iowa, draining 2925 square miles of land. Nearly all of this picturesque river valley is in Iowa.

The valley of the Nishnabotna is the chief drainage basin in southwestern Iowa, just as the Little Sioux Valley is the most prominent in the northwest. It drains 5.2 per cent of the area of the State compared with 7.3 per cent drained by the Little Sioux. Viewed in still another way, the Nishnabotna drains an area greater than the State of Delaware with Fremont County tossed in for good measure.⁴²⁶

The Nishnabotna River is composed of two main branches—the West Nishnabotna and the East Nishnabotna. The West Nishnabotna is augmented by an

The Nishnabotna River

East Fork and West Fork as well as by Silver Creek and Walnut Creek which give it a basin of 1582 square miles. The East Nishnabotna is smaller, with minor tributaries, and is located in a narrow valley which contains only 1068 square miles. The basin of the combined valleys is roughly wedge-shaped, being widest at its upper end and gradually tapering off as the two rivers approach their junction at Riverton, Iowa, nine miles above the northern boundary of Missouri. The main stem of the two streams below Riverton drains only 275 square miles, for it flows only a short distance through northwestern Missouri before discharging into the Big Muddy. The mouth of the Nishnabotna was formerly twenty miles farther south but recent changes in the channel of the Missouri have cut off the lower portion and reduced the length of the Nishnabotna to approximately 162 miles. The length of the Nishnabotna Valley is about 112 miles and its maximum width, at the headwaters, is approximately forty miles.

Between the Boyer and the Nishnabotna valleys is an area of 875 square miles which is drained by Pigeon, Mosquito, Keg, and Waubonsie creeks. Although these streams may seem insignificant when their combined basins are compared with that of the Nishnabotna, they actually surpass the Boyer and the Nishnabotna valleys in historical interest and economic development. Nestled between Pigeon and Mosquito creeks is Council Bluffs, the metropolis of southwestern Iowa and the seventh largest city in the State. Glenwood, located on Keg Creek, is the only other city in this area.⁴²⁷

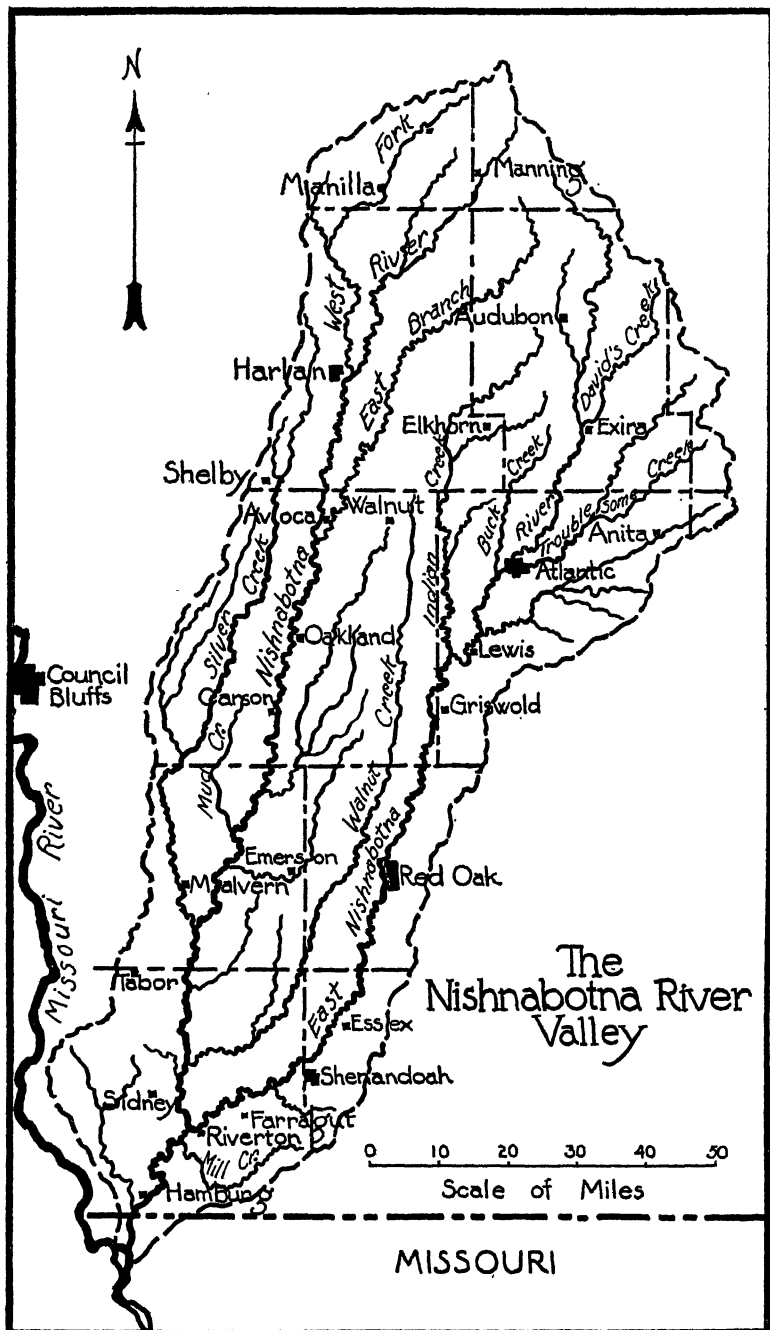
The Council Bluffs region has a remarkable history.

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There, long before the coming of the white man, the Ioway, the Oto, the Omaha, and numerous other Indian tribes once dwelt. There, at Mynster Spring, Chief Hard Heart and his Ioway Indians trapped and hunted. There, a hundred years ago, Father Pierre Jean De Smet performed missionary service among his drunken Potawatomi wards. There Camp Fenwick (Fort Croghan) was established in 1842. There the first Mormons arrived on June 14, 1846, after their long trek across southern Iowa from Nauvoo to the banks of the Missouri. There Captain James Allen recruited part of his colorful Mormon Battalion. There a post office was established on February 17, 1848, which, at the request of Brigham Young, was named Kanesville in honor of Colonel Thomas L. Kane, who was a warm friend of the Mormons. The *Frontier Guardian*, the first newspaper published in western Iowa, was issued at Kanesville in 1849.

This historic site, renamed Council Bluffs in 1853, continued to be a favorite outfitting town for immigrants on the Mormon and Oregon trails. California-bound gold miners and adventurers of the Pike's Peak gold rush found this bustling Missouri River town a good place at which to make final preparations for the long, hard trip across the plains. When Abraham Lincoln designated Council Bluffs as the terminal of the Union Pacific Railroad its future was assured. In 1940 Council Bluffs had a population of 41,443, contributing distinction to a region which otherwise might be considered only in terms of the Pigeon, the Mosquito, the Keg, and Waubonsie creeks.⁴²⁸

Though the Nishnabotna Valley contains no city of the



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first class, there are several smaller cities in that region. Who has not heard of Shenandoah, Red Oak, and Atlantic, flourishing in the valley of the East Nishnabotna? Who has not read of Harlan situated on the West Fork of the West Nishnabotna? Shenandoah was so named because the valley of the Nishnabotna seemed so much like the famous Shenandoah Valley of Virginia. Red Oak derived its name from the many red oaks growing on the banks of a small creek nearby. Atlantic was thought to be half way between the two oceans and so a coin was tossed to determine whether the name should be Atlantic or Pacific. Harlan was named for United States Senator James Harlan who also served as Secretary of the Interior in Abraham Lincoln's cabinet. A dozen other towns — Sidney, Hamburg, Essex, Tabor, Malvern, Griswold, Avoca, Walnut, Anita, Oakland, Manning, and Manilla — may be found in the valley of the Nishnabotna.⁴²⁹

The predominantly rural character of southwestern Iowa is attested by the fact that nearly 40 per cent of the income of the region is derived from agriculture, which is a much higher percentage than that for the State as a whole. Practically all of the Nishnabotna Basin is included in the western livestock area, except for a fringe along the northeastern edge where cash grain crops are predominant.

Soil erosion in this region is heavy. Great quantities of loose earth in the plowed fields are carried away with every hard rain. By the early years of the twentieth century this rapid erosion had overloaded the streams and caused them to fill their banks to overflowing several times yearly. Extensive channel straightening has remedied this grave con-

The Nishnabotna River

dition by increasing the slope and causing the rivers to cut deeper channels in the loess-covered Nebraskan drift through which they flow.⁴⁸⁰

The Nishnabotna is rich in historic significance. The name is of Indian origin and has been translated in various ways. A. R. Fulton declared that it was a Sioux word which meant "crossed in a canoe", from the fact that a party of Indians found the river too deep to be crossed without a canoe. Others have defined the word to mean "good canoe" or "canoe making river" or the "place where canoes are made".⁴⁸¹

The word Nishnabotna, like Wapsipinicon and Maquoketa, challenged the orthography of most travelers. Members of the Lewis and Clark expedition spelled the word in at least five different ways: Neeshnahbatono, Neashna Battona, Nishnahbatona, Neeshba, and Nishnay Baton. There were numerous other spellings, almost all of them more complicated than the modern, simple, musical Nishnabotna. Iowans may be thankful that the stream retained this spelling and meaning. Who could find comfort in the name "Ichinipokine", which John C. Luttig used to designate the Nishnabotna in 1812?⁴⁸²

Like the Soldier and the Boyer rivers, the Nishnabotna seems to have been named before the Lewis and Clark expedition, although unfortunately, most eighteenth century maps failed to show the stream. Even as late as 1794, the Laurie & Whittle map omitted any reference to it.⁴⁸³ Two years later Victor Collot learned of the river during the course of his journey through North America. In addition to making a careful "survey of the countries watered by

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the Mississippi, Ohio, Missouri, and other affluing rivers", he also recorded "exact observations on the course and soundings of these rivers; and on the towns, villages, hamlets and farms of that part of the new-world; followed by philosophical, political, military and commercial remarks and by a projected line of frontiers and general limits". He supplemented this work with thirty-six "maps, plans, views and divers cuts" which are of great value to the student of Iowa and Mississippi Valley history.

On his "General Map of North America", Collot indicated only three Iowa streams along the Missouri slope — the "Great" Sioux, the Little Sioux, and the "Nichenanbatonnais" — the last named flowing through a "Very Fruitful Country". According to his information, "Fifteen leagues from the northern side of the Little Nidmaha [Nemaha] is the river Nichenanbatonnais, navigable an hundred leagues for hunting boats; these lands are bare, and of the same quality as the preceding." Since he described the Great Nemaha and Little Nemaha as flowing through "high meadows and lands of a bad quality" it is difficult to understand why his map should label it as a fruitful country.⁴⁸⁴

Another French traveler, François Marie Perrin du Lac, mentioned the Nishnabotna before the advent of Lewis and Clark. He identified the stream as the "Nichinibatone" but had little else to say about it. Indeed, he found nothing along the Missouri below present-day Nebraska City "worthy the attention of a traveler".⁴⁸⁵

Probably the best descriptions of the Nishnabotna River were left by members of the Lewis and Clark expedition.

The Nishnabotna River

On July 14, 1804, Captain Clark noticed a stream fifty yards wide at its mouth which entered the Missouri just above the foot of a large island. It was a "Considerable Creek", which the Omaha Indians called Neeshnahbatona, and ran "parrilel" to the Missouri the greater part of its course. "In those small Praries or Glades", Clark "saw wild Timothy, lambs-quarter, Cuckle burs, & rich weed. On the edges Grows Sum^r. Grapes, Plum's, & Goose berries."

Three days later, on July 17, 1804, Captain Lewis explored the Nishnabotna as it passed the "*Bald-pated Prarie*" hills. The river approached to within 300 yards of the Missouri at the point where Lewis and Clark were encamped, which was between ten and twelve miles from its mouth. When Captain Lewis returned in the evening he reported seeing some "handsom Countrey", wooded with oak, walnut, and mulberry, through which the "rapid muddy and running" Nishnabotna pursued its tortuous course. He thought the bed of the stream there was lower than the Missouri channel.⁴⁸⁶

Brackenridge, Luttig, Long, Maximilian, and Audubon also observed the Nishnabotna as they voyaged on the Missouri, and praised the beautiful valley. On September 7, 1819, Edwin James passed the mouth of the Nishnabotna and arrived at the Grand Pass. "Here", James related, "the Nishnebottona, a beautiful river about sixty yards wide, approaches within one hundred and fifty yards of the Missouri, being separated from it by a sandy prairie, rising scarcely twenty feet above the surface of the water. After pursuing for a short distance a parallel course, the two rivers diverge, and the Nishnebottona meanders along the

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side of the Missouri Valley, about sixty miles to its confluence with the latter river. From this point is a pleasing view of the hills called the Baldpated Prairie, stretching along the north-eastern side of the Nishnebotna, and diminished to the size of anthills in the distant perspective.”⁴³⁷

John James Audubon studied the wild life of the lower Nishnabotna as the *Omega* steamed up the Missouri past the mouth of that stream on May 7, 1843. At one point, where he went ashore with some companions while the boat was wooding up, he “saw five Sand-hill Cranes, some Goldfinches, Yellowshanks, Tell-tale Godwits, Solitary Snipes, and the woods were filled with House Wrens singing their merry songs.” As they continued upstream past the Bald-pated Prairie, Audubon “saw Orchard Orioles, Blue-gray Flycatchers, Great-crested and Common Pewees, Mallards, Pileated Woodpeckers, Blue Jays, and Blue-birds; heard a Marsh Wren, saw a Crow, a Wood Thrush, and Water Thrush. Indigo-birds and Parrakeets plentiful. This afternoon we went into the pocket of a sand bar, got aground, and had to back out for almost a mile. We saw an abundance of Ducks, some White Pelicans, and an animal that we guessed was a Skunk. We have run about fifty miles, and therefore have done a good day’s journey. We have passed the mouths of several small rivers, [including the Nishnabotna] and also some very fine prairie land, extending miles towards the hills. It is now nine o’clock, a beautiful night with the moon shining. We have seen several Ravens, and White-headed Eagles on their nests.”⁴³⁸

In 1840, only three years before the voyage of Audubon,

The Nishnabotna River

all southwestern Iowa and northwestern Missouri was beyond the frontier. A decade later, in 1850, the land within about forty miles of the Missouri as far north as Council Bluffs was becoming settled. This included the southern half of the Nishnabotna Valley but not the Tarkio, the Nodaway, and the Grand valleys, which were not occupied until 1860. The influence of rivers in determining the course of empire was revealed by this interesting phenomenon: the frontier had moved more swiftly up the Missouri and Nishnabotna rivers than it had crossed southern Iowa from the Mississippi to the Missouri.⁴³⁹

The valley of the Nishnabotna is associated with many stirring episodes in Iowa history. Across its many headwaters the Mormons trekked in 1846 while enroute from Nauvoo to what is now Council Bluffs. John Brown and his followers made their headquarters at Tabor; and the Underground Railroad passed through that abolitionist stronghold. The Congregationalists established a college at Tabor in 1866. After seventy years Tabor College had to close in 1926, but it was re-opened by alumni in 1936.⁴⁴⁰

Education has seen some strange quirks in the Nishnabotna Valley. In 1880 the North Western Railway Company platted a town near the headwaters of the West Nishnabotna in Carroll County and named it Manning in honor of Orlando H. Manning, editor of the Carroll *Herald* and Lieutenant Governor of Iowa. An epigram uttered by him in a Republican convention became a party slogan: "Iowa, the State that has a schoolhouse on every hill and no saloon in the valley." Yet Manning's namesake town became noted for its saloon with a 112-foot Horseshoe Bar.⁴⁴¹

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Beautiful rolling land is characteristic of the Nishnabotna Valley. Avoca was named for the Avoca River in Ireland which Thomas Moore lauded as the "vale of Avoca". Audubon County was appropriately named for John James Audubon who praised that region in 1843, and the county seat which also bears his name is noted for its beautiful trees and native wild flowers growing in the city park. A ten-acre preserve for the protection of wild game and wild plants has been set aside by Audubon County. Hamburg, named by a settler for his native city in Germany, has attained considerable fame for its Peony Festival. A Wild Flower Preserve begun by naturalist Frank C. Pellet near Atlantic almost thirty years ago contains over 200 species of flowers and shrubs. An idyllic retreat for citizens of the valley is Cold Springs State Scenic Preserve, located near Lewis on the East Nishnabotna.⁴⁴²

Rich soil and a healthful climate contribute toward making this a land of milk and honey. At Exira a single apiary houses 700 colonies of bees and produces 50,000 pounds of honey annually. Near Brayton a molasses factory manufactures 700 gallons of sorghum each year. Neighbors for miles around gather for the big taffy pull that celebrates the completion of the molasses making. The Atlantic Canning Company cans 50,000 cases of sweet corn annually as well as enormous quantities of pumpkins. Cass County farmers raise from ten to twenty tons of pumpkins per acre and sell them for five to nine dollars a ton.

Industry as well as agriculture flourishes in the valley of the Nishnabotna. Calendars manufactured at Red Oak are

The Nishnabotna River

in use all over the United States. Both Armour and Swift have large packing plants at Atlantic. The firm of Shrauger and Johnson manufactured nearly \$5,000,000 worth of folding stoves and army cots at Atlantic during the World War. Shenandoah is noted for its five large nurseries, one of which dates back to the founding of the town in 1870. Sidney, although twenty years older than Shenandoah, is only one-sixth as large, but all roads lead to Sidney on rodeo day when thousands jam the stands to witness the premier cowboy show in the Hawkeye State.

Resourcefulness and intelligence are characteristic qualities of those who dwell in the Nishnabotna Valley. The pioneers of Oakland built the first bridge across the West Nishnabotna, using the materials and labor of their own community. On July 4, 1886, long before the Wright brothers flew a heavier than air machine at Kitty Hawk, a citizen of Imogene tried in vain to demonstrate his flying machine. In 1934 Florence Green of Red Oak won the State "Brain Derby" for the third consecutive year. W. P. Wortman of the Malvern *Leader* received the Master Editor award in 1934, while Edwin Percy Chase of Atlantic won the Pulitzer Prize for the best editorial of that year. Truly, they do great things in the valley of the Nishnabotna.⁴⁴³

RIVERS OF SOUTHERN IOWA

FIVE tributaries of the Missouri River — the Tarkio, the Nodaway, the Platte, the Grand, and the Chariton — have their headwaters in Iowa. These five streams drain a total area in Iowa and Missouri of 15,881 square miles, which exceeds the whole valley of the Des Moines. Although only 4945 square miles (less than one-third of their combined basins) lie within the borders of Iowa, this represents 8.8 per cent of the area of the State. The Tarkio, the Nodaway, the Platte, the Grand, and the Chariton accordingly deserve notice in the story of Iowa waterways.

The five valleys are bounded on the northeast by the Des Moines Valley and on the northwest by the Nishnabotna Valley. Together these basins in Iowa form a triangle based on the southern boundary of the State. The apex is determined by the Nodaway which rises south of the town of Adair. This triangular area embraces the six southern Iowa border counties extending westward from Appanoose to Page, all of Adams County, and parts of Monroe, Lucas, Clarke, Union, Madison, Adair, Cass, Montgomery, and Fremont counties.

The Grand River has a total drainage equal to the other four streams. Although only one-fifth of the basin of the Grand River is in Iowa while two-thirds of the Nodaway Basin is in the Hawkeye State, the Grand drains 510 square miles more of Iowa soil than the sleepy Nodaway. A com-

Rivers of Southern Iowa

parison of the Iowa drainage areas of these five streams with those of other Iowa rivers shows the Nodaway Basin about equal to that of the Boyer, the Grand Valley matching the Turkey, the Tarkio Valley barely exceeding the Yellow, the Chariton about the same as the Boone, and the Platte almost equivalent to the Floyd.

The physiographical features of these southern Iowa streams are much the same. Their valleys have been formed in the Nebraskan and the Kansan glacial-drift area, which means that they are relatively old and therefore unaffected by the Illinoian, Iowan, and Mankato ice sheets. The maturity of their topography is evident from the varied relief, the broad valleys, and the sluggish streams meandering through wide flood plains. Soil erosion in this region is more serious than anywhere else in Iowa. Damage from floods is limited almost entirely to crops and to agricultural land. None of the five streams is navigable by steam craft. They have never been important factors in providing water power: the census of 1880 listed only twenty milldams with an average head of eight feet. By 1910 there were only three water mills left, all of which have since disappeared. Although possessing many features in common, the rivers of southern Iowa are worthy of special discussion.⁴⁴⁴

THE TARKIO RIVER

The smallest and most westerly of the five southern Iowa rivers is the Tarkio River. The East, Middle, and West forks of this stream rise in central Montgomery County. Flowing southward through Page County they make a

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common junction at Tarkio in Atchison County, Missouri. The various branches which drain the Tarkio Valley pursue a southerly course between the Nishnabotna and the Nodaway valleys. About five miles above the Kansas-Nebraska line the main stream empties into the Missouri River. Parts of Montgomery and Page counties in Iowa and Atchison and Holt counties in Missouri are drained by the numerous rivulets that belong to the Tarkio system. Only 290 square miles of its total basin of 721 square miles lie within Iowa. The town of Tarkio in northwestern Missouri was laid out in 1880, and is the metropolis of the valley, although its population is a scant 2000. Tarkio College, which was established by the Presbyterians in 1882, makes the town an educational center.⁴⁴⁵

When Lewis and Clark went up the Missouri in 1804 they noticed a small stream which the Indians called Tarkio, meaning "walnut" or "a stream where walnuts grow". "I went on Shore above this Creek", Clark wrote, "and walked up parrelel with the river at about half a mile distant, the bottom I found low & Subject to over flow, Still further out, the under groth & vines wer So thick that I could not get thro: with ease". Captain Lewis reported that "Tarkio Creek" was about twenty-three yards wide at the mouth and "navigable for perogues a short distance". The Tarkio, he was told, "heads with the Nadiway and passes through a tolerable country of plains and woodland." Both Floyd and Ordway mentioned the "Tarcio" in their journals. Brackenridge noted the stream in 1811. Clark's map of 1810 and Arrowsmith's map of 1814 also show the Tarkio. Elliott Coues characterized the river as

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a "sloughy stream, whose waters have leaked into the Missouri in places at least twenty miles apart." ⁴⁴⁶

THE NODAWAY RIVER

The Nodaway River has one of the most unusual valleys in Iowa. The basin is very wide at the headwaters, then tapers into a uniformly narrow valley throughout the lower three-quarters. The West, Middle, and East Fork of the Nodaway River, together with Seven Mile Creek, rise in Cass and Adair counties on the flat divide between the Mississippi and the Missouri watersheds at altitudes ranging from twelve to almost fourteen hundred feet above sea level. The Middle Fork of the Nodaway, which extends farthest north of any of the five southern Iowa rivers, joins the West Fork a short distance below Villisca while the East Fork unites with the main stream not far above the Missouri line near the town of Shambaugh. The Nodaway Valley embraces some of the richest agricultural land in the State. In contrast with the Tarkio Valley, it contains several towns within its borders. Clarinda is the metropolis of the valley, but Corning and Villisca are also classified as cities. Greenfield lies on the watershed between the Nodaway and the Grand valleys. Fontanelle, Cumberland, Massena, Bridgewater, Carbon, Hepburn, and College Springs are some of the attractive smaller towns. ⁴⁴⁷

The name of the Nodaway River was derived from the Indian word Nadawa which has been translated to mean "Snake" River. A. R. Fulton declared it was a Sioux word meaning "crossed without a canoe" to contrast it with the Nishnabotna. The stream debouches into the Missouri River

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almost midway between St. Joseph, Missouri, and the Kansas-Nebraska line. Captain William Clark found the Nodaway "about 70 yards wide" a little above its mouth and "navigable for Perogues Some distance". The expedition camped at the head of "Nadawa" Island, opposite the mouth of the river, which Captain Clark declared was the largest he had seen in the Missouri River. It contained "7 or 8000 acres of Land Seldom over flowed". Meriwether Lewis declared the Nodaway "takes it's rise with grand River, Nish-nah-ba-to-na, and the waters of the river Demoin; and passes in it's course to the Missouri through a fine fertile country, consisting of a mixture of woodlands and plains; the lands about it's mouth are well timbered and waterd."

As usual the members of the Lewis and Clark expedition were original in their orthography; only Sergeant Ordway managed to spell Nodaway in the modern way. Private Joseph Whitehouse made the worst guess, but contributed an interesting definition of its meaning. He wrote in his journal on July 8th, "the wind Rose before we starte^d. and blew fair with us Sail^d Chiefly for the space of Eight hours we came to Small River Call^d. little Nan doughe, [Nodaway] In Indian tounge, Inglish little woody River . . . on our W. S. [west side] a bear appeared but Coul^d. not be Shot Made his Alopement we Got to the River Nandouie Roe^d 15 Miles Incamp^d. at the head of a large Island." ⁴⁴⁸

Virtually all travelers on the Missouri called attention to the Nodaway. On November 16, 1810, John Jacob Astor's famous Astorian expedition went into winter quar-

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ters at the mouth of the "Nodowa", 450 miles up the Missouri. In the following spring large numbers of snakes were found reviving from their winter torpor beneath the flat rocks. This fact possibly accounts for the Indians calling the stream the "Snake" River. In 1811 Brackenridge found many deer in the "Nodawa" Valley but understood they lessened farther upstream as the thickets for shelter diminished. John C. Luttig killed four deer and gathered "about 200 turtle Eggs" on June 14, 1812, when he passed the "Nadowa" River. Edwin James, who located the "Nodowa" River above Cow Island, reported that the river drained lands of "excellent quality".

The steamboat *Yellowstone* ran into considerable difficulty above the mouth of the "Nadaway" in 1832, and had to back some distance to land woodcutters on Nodaway Island. "A Captain Martin wintered on this island for two seasons, 1818 and 1819, with three companies of riflemen", Maximilian related. "At that time there was so much game that they entirely subsisted on it. We were told that in one year they killed 1,600, in the other 1,800 head of game [deer], besides elks and bears; and wounded, perhaps, as many more of those animals, which they were unable to take." Maximilian thought the woods, composed of horse-chestnut, white ash, and many species of pear and plum, were very unusual. It is not surprising that the Nodaway was a favorite hunting ground of the Ioway Indians.⁴⁴⁹

THE LITTLE PLATTE RIVER

The Platte is third in size among the river valleys of

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south central Iowa, though less than a third of its 2440 square miles are in the Hawkeye State. The headwater tributaries of the Platte rise in Adair and Union counties and follow a southwesterly course through Adams, Ringgold, and Taylor counties. Its one major tributary, the One Hundred and Two River, which occupies the western half of the Platte Valley, joins the Platte a few miles east of St. Joseph, Missouri. Thence the main stream continues southward until it discharges into the Missouri River in Platte County, Missouri, five miles south of Leavenworth, Kansas. The Platte rises at an elevation of about 1220 feet above sea level and flows 243 miles before joining the Missouri at an elevation of 750 feet. Creston and Bedford are the two principal Iowa cities in the Platte Valley, while Maryville, Plattsburg, and Platte City, are the chief Missouri towns. Measured by drainage area the Platte is no small stream: its basin equals that of the Tarkio and the Nodaway combined and stands next to the basins of the Grand and the Chariton.

And yet, the Platte of Iowa pales into insignificance when compared with the Platte River of Nebraska, which drains immense areas of Wyoming, Colorado, and Nebraska, and is associated with the Mormon Trail, the Oregon Trail, the Forty-Niners, the Pike's Peak Gold Rush, and the building of the Union Pacific Railroad. The smaller stream, which rises in Iowa, slips into the Missouri from the northeast 207 miles farther downstream. The physical difference between these two rivers, which caused early travelers to call them the Great Platte and the Little Platte, is apparent from a comparison of length and drainage area.

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The Great Platte is 990 miles long and has a basin containing 90,200 square miles, or four times as long and thirty-seven times as large as the Little Platte.⁴⁵⁰

Although neither as large nor as historically romantic as the Great Platte, the Little Platte was known and described by explorers before the Lewis and Clark expedition. Victor Collot, for example, called attention in 1796 to the "little river Plate" which emptied into the Missouri "five leagues" above the Kansas River. According to Collot the Little Platte was "navigable at no season of the year, and is dry during the summer." Perrin du Lac included the "*Petite Riviere Platte*" on his map of 1802.⁴⁵¹

Lewis and Clark described the Little Platte rather fully. Captain Clark called attention to "a Small river 10 M^s. above the *Kansas* called by the french *Petite River Platte* (or Shoal river) from the number of falls in it, this river is about 60 yards wide at its mouth and runs Parrilel with the Missouries for ten or twelve miles". According to Captain Lewis the "Little river Platte" had its source "in open plains between the Nadawa and grand rivers, and through the principal part of it's course passes through high open plains interspersed with groves of timber. 6 or seven leagues before it discharges itself into the Missouri, it meanders through a high fertile well timbered bottom nearly parallel with that river, and receives in it's course severall handsom creeks, which discharge themselves into it from the hills. at the distance of 12 leagues it's navigation is obstructed by a considerable fall, above which, it is shallow and interrupted by such a number of rapids, that it is no further practicable. This fall, and many of

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the rapids afford excellent situations for gristmills, and other water-works." These facts were confirmed by Sergeants Floyd and Ordway in their journals.

Game was plentiful at the mouth of the Platte. The men saw a "verry large woolf" on a sandbar and "emence numb^s. of Deer" which were "Skipping in every derection". Hunters shot nine bucks. After the Lewis and Clark expedition virtually all cartographers included the Little Platte on their maps.⁴⁵²

The Little Platte was noted by many others. On the evening of April 28, 1811, Brackenridge passed the "little river Platte" which he said was supposed to be "navigable with canoes fifty or sixty miles" and to "abound with beaver". He reported the stream to be sixty yards wide and estimated that it was 349 miles above the mouth of the Missouri. In the following year John C. Luttig camped four miles above the Little Platte. In 1819 Edwin James declared the Oto Indians hunted between the Little Platte and the Boyer. Maximilian, in 1832, asserted that the Ioway Indians had their villages on the north bank of the Little Platte seven miles above its mouth. According to him the Ioways hunted "the country about the Little Platte, Nadaway, Nishnebottonch Rivers, together with a band of the Saukies, who have settled in this neighbourhood." The Little Platte gave its name to the Platte Purchase, whereby the State of Missouri in 1837 extended its northwestern boundary to the Missouri River. When Audubon passed in 1843 he found the only white settlements were on the east bank of the Missouri River in the Platte Purchase.⁴⁵³

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THE GRAND RIVER

The Grand River is worthy of its name. It is the largest tributary of the Big Muddy in the State of Missouri. It drains a basin equal to the four other streams that headwater in south central Iowa. Of Iowa valleys only those of the Des Moines and Big Sioux exceed it in area. Several of the largest tributaries of the Grand rise in Iowa. Indeed, the largest of all, which United States Army Engineers call the Thompson River, drains 2200 square miles. The Thompson, usually designated as the Grand on Iowa maps, extends to the upper reaches of the valley in the vicinity of Greenfield. The East, Middle, and West forks of the Grand River drain the western portion of the valley. Besides the branches of the Thompson and the Grand, a number of minor tributaries trickle down from Iowa into Missouri. Big Creek rises south of Kellerton and flows in a southerly direction just west of Lamoni. The Weldon River and its tributaries (Little River and Steele Creek) drain the Garden Grove-Leon area. East Muddy Creek rises near Clio and the source of East Medicine Creek is near the town of Allerton. Locust Creek has its headwaters near Sewal in Wayne County. In 1930 a total of 46,120 people lived within the valley of the Grand River in Iowa, which represented an average density of 27 persons per square mile.

The Grand River system rises at about 1300 feet above sea level in Adair County, a short distance northeast of Greenfield, and empties into the Missouri River 261 miles above its mouth. The length of the stream is 215 miles and its average fall is 3.6 feet per mile. It flows through

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a typical prairie country largely devoted to agriculture. About 75 per cent of the basin is suitable for cultivation. The rainfall in the valley is about thirty-six inches annually, which is some four inches greater than the average for Iowa. The broad flat bottoms of the larger streams subject approximately 340,000 acres of agricultural land to frequent inundation. United States Army Engineers estimate that \$13,252,500 would be required to protect 135,030 acres from the ravages of floods, which would amount to \$98 per acre or probably more than the prospective value of the land after being protected. The slight slope of the major tributaries makes the development of water power impracticable. For almost a dozen years before the Civil War steamboats plied regularly to Bedford, Missouri, sixty miles above the mouth of the Grand River, and occasionally ascended twenty miles higher, to Utica, Missouri. Subsequently there was some steamboating on the lower reaches of the stream but by 1870 this had ceased.⁴⁵⁴

The Grand River was well known before the Lewis and Clark expedition. The map of Robert Laurie and J. Whittle in 1794 showed the "Great" River flowing southward through the "Great Meadows" of northern Missouri. Two years later Victor Collot called attention to the "Great River" emptying into the Missouri River nine miles above the "Cheraton". According to Collot, it was "navigable eighty leagues for large barks; it communicates towards its sources by a small carrying place of ten or twelve miles, with the river Dumoins, which falls into the Mississipi." In 1802 Perrin du Lac found "*La Grande Rivière*" over

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"forty fathoms wide at its mouth, and navigable with boats above 300 miles". Samuel Lewis showed the "Great R." on his map of 1804.⁴⁵⁵

The Grand River was once a great highway for the fur trade. Henry M. Brackenridge located this "fine river" 250 miles above the mouth of the Missouri and learned that it was navigable for 600 miles. Fur traders bound for the Dakotas often paddled up the Grand to avoid the warlike tribes in western Missouri and Kansas.⁴⁵⁶ Both Lewis and Clark testified to the importance of the Grand River. The expedition camped on June 13, 1804, at the mouth of the Grand, which Captain Clark estimated to be "from 80 to 100 yards wide at its mouth and navigable for Perogues a great distance". His guides informed him that the Grand headed in the vicinity of the Des Moines. "Cap^t Lewis and myself", he continued, "walked to the hill, from the top of which we had a butifull prospect of Serounding coun-trey, in the open Prarie we caught a racoon, our hunter brought in a Bear & Deer". Captain Lewis reported that the Grand "disembogues" into the Missouri twenty-two miles above the Chariton near a "beatifull and extensive prarie in which the ancient village of the Missouris was situated. Old Fort Orleans is said to have stood on the lower point of an Island a few miles below this place, no traces of that work are to be seen."⁴⁵⁷

Other travelers were equally impressed with the Grand River. Brackenridge "breakfasted under sail" as he passed the mouth of the Grand on April 17, 1811. "It is two hundred yards wide at its mouth", he recorded, "very long, and navigable six or eight hundred miles". The surround-

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ing prairie land, interspersed with a few clumps of trees, he thought would be a "delightful situation" for a village. Brackenridge believed the Grand might be considered the "boundary of the wooded upland" on the north side of the Missouri.

Most travelers learned about the Grand River from others, but Edwin James actually ascended the stream to what is now Iowa in 1819. During the first eighty miles from its mouth Dr. James passed through a "fertile" country which presented "such an intermixture of forests and grassy plains, as is extremely pleasing to the eye." Farther north he thought the topography of the country indicated the possibilities of coal beds lying "near the sources of the DeMoyen and Grand" rivers. "Leaving the immediate neighbourhood of the river, there is an ascent of several miles to the level of the great woodless plain. The bottom, and part of the sides of the vallies, are covered with trees; but in proportion to the elevation, the surface becomes more unvaried and monotonous. These vast plains, in which the eye finds no object to rest upon, are at first seen with surprise and pleasure; but their uniformity at length becomes tiresome."

The level prairie made it difficult to estimate distances or identify objects: on one occasion what appeared at a distance to be a number of bison turned out to be "an old turkey, with her brood of half-grown-young." Near the headwaters of the Grand, the explorers were "so tormented by the mosquitoes" and "harassed and goaded by the wood-ticks" that they were glad to mount their horses in the early morning and ride westward toward the "upper

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branches of the Little Platte.”⁴⁵⁸ Such were the conditions along the Grand a generation before the Mormon trek and the coming of the first white settlers.

THE CHARITON RIVER

The Chariton, most easterly of the five streams of south central Iowa, stands second to the Grand in the extent of its entire basin, but third among them in its drainage area within Iowa. Only 30.4 per cent of its basin is in Iowa and that amounts to 1.6 per cent of the total area of the State. Rising at an elevation of about 950 feet above sea level, the Chariton flows 280 miles before emptying into the Missouri River at an elevation of 590 feet, some 231 miles above the mouth of that stream. The average slope of the river is 1.3 feet per mile. The mean average precipitation in the basin is thirty-six inches a year. Since the valley is very old the river is choked and sluggish but channel straightening in the last twenty miles in Iowa and throughout Missouri has alleviated flood damage.

The Chariton drains a rural area in which agriculture predominates. Moberly, Missouri, is the metropolis of the valley with 12,897 inhabitants in 1940; Marceline and Macon are smaller Missouri towns. Centerville, Iowa, with a population of 8413, is the second largest city in the Chariton Valley, and among the urban centers of the five south central river valleys in Iowa, it is the largest. The density of rural population is about 26.5 people per square mile. Appanoose County, which occupies a large part of the valley in Iowa, is an important coal-mining area. Only 17.2 per cent of the income in that county is derived from

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agriculture, compared with a State average of 27.5 per cent and a south central Iowa average of 35 per cent. The county has a per capita income of only \$483, compared with a State average of \$662.⁴⁵⁹

The word Chariton has been spelled and translated in many ways. The Osage Indians and French fur traders are said to have called the stream the *Charatonscarty*, which they defined as meaning "like the otter". The pioneers of Missouri pronounced it Charataw and claimed it meant "a country rich in honey". D. W. Eaton asserted that the river was named for John Chariton, a leader among the pioneer French fur traders who located near the mouth of the river. Whatever its meaning, the Chariton River was known at a comparatively early date because of its proximity to the mouth of the Missouri. For example, Victor Collot called attention to the "Cheraton" in 1796. The meadows through which the stream flowed, he said, were "high, but fertile" and "navigable only for small hunting boats". Perrin du Lac included the "*R. Grande Charleton*" and the "*R. Petit Charleton*" on his map of 1802.⁴⁶⁰

When Lewis and Clark passed on June 10, 1804, they noted two "Shariton" rivers. According to Lewis, "the little Shariton river heads with Good-woman's river . . . this country has not been much explored, the portion of it which is known is fertile, and consists of a mixture of prairies and woodlands. The larger Shariton is 70 yards wide above the entrance of the smaller, and is navigable for perogues nearly to it's source. it takes it's rise near the Red Cedar river a Western brance of the river Demoin. the country through which it passes is level, and fertile

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consisting of an irregular mixture of woodlands and prairies, each alternately predominating in different parts." Captain Clark mentioned that the Ioway Indians had a village at the head of the "Charletons" river. The expedition, according to Private Whitehouse, suffered from "Musquitoes" while waiting for the hunters at the "Bigg Charrottoe". Lewis and Clark estimated that the Chariton was 226 miles above the mouth of the Missouri.⁴⁶¹

Henry M. Brackenridge gave the "Chareton" only a passing notice. Dr. Edwin James, however, who steamed by on the *Western Engineer* in 1819, was delighted with the prospects of the town of "Charaton" which had been laid out two years earlier at a point about 700 yards above the mouth of the Chariton River. "Charaton river is seventy-five yards wide at its mouth," he reported, "and navigable, at high water, one hundred and fifty miles. Half a mile from its confluence with the Missouri, it receives the Little Charaton, also a considerable stream, and navigable for many miles. The Charaton originates near the De Moyon river of the Mississippi, and traverses a country which is of great importance, both on account of the fertility of its soil, and its inexhaustible mines of coal." His appraisal of the valley was remarkably prophetic.⁴⁶²

Some Chariton Valley towns were founded by the first settlers, others grew out of old Mormon camps, most of them are on a railroad, and many of the smaller places are located at coal mines. Centerville was platted in 1846 as Chaldea by J. F. Stratton and was an important ferry crossing on the Chariton River. Plano is believed to have been named by a group of Seventh Day Adventists from

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Plano, Illinois. Promise City received its name from the Mormons who established one of their camps at that point. Mystic flourished because of a rich coal vein; Corydon is in the timothy-seed producing section of Iowa. Chariton, county seat of Lucas County, is on the rim of the valley at its most northern point. Sharon Bluffs State Park and Red Haw Hill State Park afford citizens of the valley an opportunity for pleasure and relaxation.⁴⁶⁸

Agriculture is the main source of income throughout these five river basins. There is no great variety of farming when compared with other Iowa valleys. Land values vary considerably. The average for the thirteen counties in 1923 was \$150 an acre; in 1933 this figure had dropped to \$48 an acre while in 1935 it had risen to \$54 per acre. The variation in 1933 ranged from \$31 in Appanoose County to \$71 in Page County. Manufacturing produces only 2.9 per cent of the total income compared with a State average of 10.9 per cent. The per capita income in the five basins averaged \$563 during the years 1927 to 1929, compared with a State average of \$662.

This section of southern Iowa is overwhelmingly rural in character. There is not a city in the whole region with a population over 15,000, and of cities of the second class ranging in size from 2000 to 15,000 there are only four. Creston in the Platte Valley had a population of 8033 in 1940; Centerville in the Chariton Valley had 8413 inhabitants; Chariton on a ridge over-looking the Chariton Valley had 5754, and Clarinda in the Nodaway Valley had 4905. The Tarkio Valley in Iowa does not contain a single

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town of 1000 people. Even the broad upper reaches of the Grand Valley support no towns larger than Lamoni, Leon, and Mt. Ayr.⁴⁶⁴

History, however, is plentiful in these five river valleys. The Missouri boundary controversy between the State of Missouri and the Territory of Iowa involved jurisdiction over 2616 square miles of land along the southern border of Iowa. Had the Missouri claim been recognized the southern boundary of Iowa would have been fixed approximately thirteen miles farther north on the Missouri River and about nine miles farther north where it intersects the Des Moines River. The issue, which affected about half the tier of southern counties, was finally settled in favor of Iowa by the United States Supreme Court in 1849.⁴⁶⁵

Another notable episode associated with southern Iowa was the exodus of the Mormons from Nauvoo to what is now Council Bluffs. The trail they made across southern Iowa skirts the headwaters of these five streams, and two of the most famous "Camps of Israel" (Garden Grove and Mount Pisgah) were established in the Grand Valley.

Seldom in covered-wagon days did swollen streams obstruct migration more seriously than in the trek of the Mormons in 1846. Leaving Nauvoo, Illinois, early in February, the first detachment arrived at the Chariton River in Appanoose County on March 21, 1846. In his journal of March 22nd Orson Pratt wrote: "The day is rainy and unpleasant. Moved only seven miles. The next day went through the rain and deep mud, about six miles, and encamped upon the west branch of Shoal Creek. The heavy rains had rendered the prairies impassable; and our several

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camp were very much separated from each other. We were compelled to remain as we were for some two or three weeks, during which time our animals were fed upon the limbs and bark of trees, for the grass had not yet started, and we were a number of miles from any inhabited country, and therefore, it was very inconvenient to send for grain. The heavy rains and snows, together with frosty nights, rendered our situation very uncomfortable."

Leaving Shoal Creek on April 9th, the Mormons moved on slowly. "The rain poured down in torrents", according to Orson Pratt. "With great exertion a part of the camp were enabled to get about six miles, while others were stuck fast in the deep mud. We encamped at a point of timber about sunset, after being drenched several hours in rain. The mud and water in and around our tents were ankle deep, and the rain still continued to pour down without any cessation. We were obliged to cut brush and limbs of trees, and throw them upon the ground in our tents, to keep our beds from sinking in the mire." Thousands of Iowa pioneers experienced similar difficulties as they moved westward in their covered wagons.⁴⁶⁶

The Chariton and the Grand valleys were ceded to the United States in 1842 by the Sauk and Fox Indians who withdrew from the eastern portion across the Red Rock line in 1843. Two years later the Indians moved reluctantly from the headwaters of the Chariton and the Grand River valleys. The Tarkio, the Platte, and the Nodaway valleys were surrendered in a treaty signed by the Sauk and Fox, the Omaha, Iowa, Oto, Missouri, and various bands of Sioux at Prairie du Chien on July 15, 1830, but

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in 1833 the Potawatomi were moved into this region which they in turn released in 1846.

Settlement began as soon as the Indians moved west, but the frontier line had been pushed only a short distance up the Chariton Valley by 1850. At that time all the remaining area in south central Iowa had a population of less than two people per square mile. This is not strange in view of the fact that the northern tier of Missouri counties as far east as the Des Moines Valley was no more densely populated in 1840. It was not until 1860 that the frontier line had moved beyond the headwaters of these five streams.⁴⁶⁷

LITTLE RIVERS

IN considering the rivers of Iowa most people are likely to think of the Mississippi and the Missouri or their major tributaries. And yet it is the little rivers that swell the larger streams to giant proportions. Even the thirty-four-mile Yellow River has more than forty branches. Henry Van Dyke was quite aware of the tendency to neglect these inconspicuous branches of the larger waterways. "Little rivers", he said, "seem to have the indefinable quality that belongs to certain people in the world, — the power of drawing attention without courting it, the faculty of exciting interest by their very presence and way of doing things." ⁴⁶⁸

A realization of the large number of Iowa streams is, perhaps, best obtained from a geological map of any one of the ninety-nine counties. A drainage map of the State will also disclose some amazing details, particularly in the dendritic areas. In 1914 the United States Geological Survey published a gazetteer of almost 1000 streams embracing "streams named on the best available maps of Iowa, including the United States Geological Survey's base map of Iowa, county maps published in the annual report of the Iowa Geological Survey, and the topographic atlas sheets of the United States Geological Survey." This catalogue was supplemented in 1935 when the Iowa State Planning Board published a list of 1246 Iowa streams. Impressive as

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these compilations are they represent only the "named" streams and do not include the hundreds of tendrils that feed these minor waterways.⁴⁶⁹

Little rivers in Iowa are usually called creeks, which the pioneers commonly pronounced "cricks". According to the dictionary a creek is a "flowing rivulet" that is "normally smaller than a river and larger than a brook or run in the same general locality". Not many Iowa streams are called brooks, but runs, branches, and forks are plentiful. A study of any of these little rivers would afford an intimate glimpse of the geology, archeology, and history of the regions through which they flow.

The nomenclature of the 1246 streams compiled by the State Planning Board is equally enlightening. In these names one finds mirrored such things as the nature of the stream and its basin, the plant and animal life found therein, the Indians identified with the region, the names of the first pioneers, and the legends and historical episodes that help to make up the story of the Hawkeye State.

The wide variety in the nomenclature of Iowa streams is, perhaps, significant. There are Short creeks and Long creeks, Big creeks and Little creeks, Sand creeks and Shoal creeks, Salt creeks and Soap creeks. There are Dry creeks and Deep creeks, Brush creeks and Snag creeks, Mud creeks and Stony creeks, Thunder creeks and Storm creeks. The contrast might be continued by matching three Black creeks with nine Clear creeks and four Coal creeks with thirteen Silver creeks. Fourteen Honey creeks, nineteen Prairie creeks, and twenty-one Rock creeks attest the popularity of those names.

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Many Iowa streams were named for the wild game found along their banks. In addition to four Badger, five Coon, nine Elk, ten Buffalo, twelve Deer, thirteen Wolf, sixteen Beaver, and eighteen Bear creeks, there are a miscellaneous number of streams named for the Buck, Fox, Mink, Muskrat, Otter, Opossum, Panther, Polecat, Raccoon, Wildcat, and Weasel. The presence of fish is indicated by such names as Bass, Catfish, Pike, Pickerel, and Trout creeks; the birds by streams bearing such names as Crane, Cookoo, Crow, Duck, Goose, Hawk, Pigeon, Snipe, Turkey, and Whippoorwill. One may even find a Kitty Creek and a Rat Creek, a Lizard Creek and a Mosquito Creek, a Snake Creek and a Turtle Creek.

Streams were also named for the trees and shrubs that grew along their banks. Indeed, as in the case of creeks named for animals, the duplication of names is confusing. There are ten Cedar, thirteen Willow, and twenty-two Walnut creeks, besides a number of streams named for the Basswood, Bur Oak, Cherry, Cottonwood, Crabapple, Elm, Hickory, Maple, Pine, Plum, White Oak, and Spruce. Eleven Brush creeks, three Brushy creeks, and four Timber creeks reflect the effort of the pioneers to characterize the streams that flowed by their "garden's end".

Many Iowa streams were named for the pioneers who dwelt upon their banks. Frequently the first settler to arrive was so honored. Plumb Creek in Clayton County was named for John Plumb, Jr., who endeavored to build a sawmill on the shallow waterway. Joe's Branch was named for Joseph B. Quigley who staked out a claim on its banks in 1836. Price's Branch was named for Eliphalet Price and

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Redman's Branch in honor of Henry Redman, who settled on the fertile bottomland near the mouth of that stream.⁴⁷⁰ Perry Creek in Woodbury County was named in honor of Robert Perry, who built his log cabin there in 1849. Waterman Creek in O'Brien County was named in honor of Hannibal H. Waterman, a New Yorker who settled there in 1856. Allen Creek in Harrison County was named for Andrew Allen, who built his home beside it in 1851.⁴⁷¹ Fully a hundred streams bear the names of pioneers, such as Jordan, Jones, Montgomery, Lotts, Nelson, Reeds, Williams, Wright, Fowler, Hanson, Tucker, Greene, Packard, Brophy, Buchanan, and Brown.

Some people lament the fact that more streams have not preserved their Indian names. They echo the feelings of Jacob Ferris when he visited Minnehaha Falls almost a century ago. In his book, *The States and Territories of the Great West*, published in 1856, Ferris fumed: "But some egotistical 'cuss,' who deserves flinging over the cataract for his impudence, has stuck the name of his own 'ugly mug' upon the picturesque locality, and called it 'Brown's Falls.' Let the public all unite in the spicy protest of the indignant tourist, who, upon the banks of the Minnehaha, in view of the 'Laughing Waters,' and of 'Brown's' desecration of them, thus proclaimed aloud: 'In the name of common-sense, and all that is poetic and pleasing in human nature, let us solemnly protest against those desecrations which rob our beautiful lakes, rivers, and cascades, of their charming and significant Indian names; and no longer allow every Brown, Smith, Snooks, and Fizzle, who happens to be the first to see some beautiful creation of Nature,

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Many Iowa streams were named for the wild game found along their banks. In addition to four Badger, five Coon, nine Elk, ten Buffalo, twelve Deer, thirteen Wolf, sixteen Beaver, and eighteen Bear creeks, there are a miscellaneous number of streams named for the Buck, Fox, Mink, Muskrat, Otter, Opossum, Panther, Polecat, Raccoon, Wildcat, and Weasel. The presence of fish is indicated by such names as Bass, Catfish, Pike, Pickerel, and Trout creeks; the birds by streams bearing such names as Crane, Cookoo, Crow, Duck, Goose, Hawk, Pigeon, Snipe, Turkey, and Whippoorwill. One may even find a Kitty Creek and a Rat Creek, a Lizard Creek and a Mosquito Creek, a Snake Creek and a Turtle Creek.

Streams were also named for the trees and shrubs that grew along their banks. Indeed, as in the case of creeks named for animals, the duplication of names is confusing. There are ten Cedar, thirteen Willow, and twenty-two Walnut creeks, besides a number of streams named for the Basswood, Bur Oak, Cherry, Cottonwood, Crabapple, Elm, Hickory, Maple, Pine, Plum, White Oak, and Spruce. Eleven Brush creeks, three Brushy creeks, and four Timber creeks reflect the effort of the pioneers to characterize the streams that flowed by their "garden's end".

Many Iowa streams were named for the pioneers who dwelt upon their banks. Frequently the first settler to arrive was so honored. Plumb Creek in Clayton County was named for John Plumb, Jr., who endeavored to build a sawmill on the shallow waterway. Joe's Branch was named for Joseph B. Quigley who staked out a claim on its banks in 1836. Price's Branch was named for Eliphalet Price and

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Redman's Branch in honor of Henry Redman, who settled on the fertile bottomland near the mouth of that stream.⁴⁷⁰ Perry Creek in Woodbury County was named in honor of Robert Perry, who built his log cabin there in 1849. Waterman Creek in O'Brien County was named in honor of Hannibal H. Waterman, a New Yorker who settled there in 1856. Allen Creek in Harrison County was named for Andrew Allen, who built his home beside it in 1851.⁴⁷¹ Fully a hundred streams bear the names of pioneers, such as Jordan, Jones, Montgomery, Lotts, Nelson, Reeds, Williams, Wright, Fowler, Hanson, Tucker, Greene, Packard, Brophy, Buchanan, and Brown.

Some people lament the fact that more streams have not preserved their Indian names. They echo the feelings of Jacob Ferris when he visited Minnehaha Falls almost a century ago. In his book, *The States and Territories of the Great West*, published in 1856, Ferris fumed: "But some egotistical 'cuss,' who deserves flinging over the cataract for his impudence, has stuck the name of his own 'ugly mug' upon the picturesque locality, and called it 'Brown's Falls.' Let the public all unite in the spicy protest of the indignant tourist, who, upon the banks of the Minnehaha, in view of the 'Laughing Waters,' and of 'Brown's' desecration of them, thus proclaimed aloud: 'In the name of common-sense, and all that is poetic and pleasing in human nature, let us solemnly protest against those desecrations which rob our beautiful lakes, rivers, and cascades, of their charming and significant Indian names; and no longer allow every Brown, Smith, Snooks, and Fizzle, who happens to be the first to see some beautiful creation of Nature,

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with dull eyes which have no appreciation for any thing more sentimental than a lump of lead, a buffalo-hide, or a catfish, to perpetuate his cognomen at the expense of good taste and common honesty.' ” ⁴⁷²

As a matter of fact Indian names were not ignored by the Iowa pioneers. In addition to the Mississippi and the Missouri, the red man is commemorated in such streams as the Iowa, the Maquoketa, the Wapsipinicon, the Big Sioux and the Little Sioux, the Nishnabotna, the Nodaway, and the Tarkio. The words Des Moines and Upper Iowa can also be traced to Indian origins, having been in use more than a century before permanent settlement began in the Black Hawk Purchase. Eighteen Indian creeks and eight Squaw creeks might also be mentioned in conjunction with Black Hawk, Muchakinok, Minnehaha, and Waubonsie creeks. The Wapsinonoc, the Wyaconda, and the Ochevedan are larger streams.

Many of these little rivers were aptly christened. The pioneers of northwestern Iowa were well acquainted with nineteen-mile Purgatory Creek in Calhoun County, which empties into the Raccoon River in Carroll County. Purgatory Creek is now spanned by railroad and highway bridges and offers no barrier to travelers between Sioux City and Fort Dodge in times of flood. But it was not so in covered-wagon days. “Purgatory Slough!” exclaimed a Sioux City editor in 1859. “What a name! And oh! what a slough! we hear those exclaim who have been so unfortunate as to be caught in it. We heard one individual say that it took four yoke of oxen to pull his light buggy through this slough. The bottom of it has never yet been

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found, and it is thought by some that it has fallen out, leaving nothing there but black miry mud, a contest with which it is thought must at least equal the supposed torments of Purgatory — hence the name.”

To “throttle” this “monster” the citizens of Webster, Calhoun, Sac, Ida, and Woodbury counties proposed to “throw an embankment and bridge” across Purgatory Slough in 1859. A Sac County pioneer, D. C. Early, offered to do the work and the Sioux City editor called upon all his readers to contribute their “mite”, even if it was “no more than 25 or 40 cents”.⁴⁷⁸ Troublesome Creek and Contention Creek probably reflect the attitude of the pioneers toward such obstacles to progress.

The explanation of the origin of the names of various Iowa streams might be continued at length. In 1837 William Grant, Clayton County pioneer, killed a doe while she was “mossing” in a small stream. He promptly called the stream Doe Creek. A little later he killed a buck in the same stream. Since the buck was larger than the doe, Grant renamed the stream Buck Creek and transferred the name Doe Creek to a nearby tributary.⁴⁷⁴ Mosquito Creek in Harrison County was named for the “great abundance” of the “bill-posting insect” that made life miserable for all who dwelt upon its banks. Colonel David W. Walton christened the small Cedar County stream on which he settled Sugar Creek from the “orchard of sugar Maples” he discovered on its banks. Cylinder Creek in Palo Alto County is said to have been so dubbed when the cylinder from a heavy machine was lost in the water while some pioneers were crossing the stream. The town of Cylinder

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derived its name from the creek. Keg Creek, a sixty-five-mile-long stream in southwestern Iowa, was originally designated "Five Barrel Creek" on old maps from the fact that some United States dragoons found that number of barrels of whisky buried on its banks near the present town of Glenwood. The barrels had apparently been secreted there by persons illicitly engaged in the Indian trade. Steer Creek in Harrison County was labelled in 1849 when several steers sank out of sight in the mud and perished.⁴⁷⁵

Among the many oddities in river nomenclature is Dirty Face Creek which empties into Old Man's Creek in Johnson County. One might glide along in Continue Creek or mire down in Sink Creek. One might puzzle over Knotty Creek or be startled by such a sobriquet as Snort Creek. More obvious cognomens are Railroad Creek, Poorfarm Creek, College Creek, and Village Creek. A Pot Hole Creek and five Picayune creeks may also be found in Iowa. To these might be added such names as Butcher, Barber, Bakers, Brewers, Fiddlers, and Farmers creeks.

Equally picturesque are such appellations as County Ditch, Union Slough, Twister Branch, and Skeleton Creek. A host of small streams have received such designations as Battle Run and Bloody Run, Rattlesnake Run and Dead Man's Run, Hog Run and Pumpkin Run, Moody Run and Happy Run, Dry Run and Devils Run, Whiskey Run and Jug Run, Monkey Run and Pickerel Run, Rat Run and Rock Run, Pleasant Run and Steady Run, Bull Run and Buck Run, Yankee Run and Quarter Section Run. A whole series of Iowa streams were named to indicate either the length of the water course in miles or the distance of

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the river from certain points: Twomile Creek, Threemile Creek, Fourmile Creek, Sixmile Creek, Sevenmile Creek, Ninemile Creek, Twelvemile Creek, and One Hundred and Two River.

The first pioneers invariably staked out their claims along the small streams flowing into the Mississippi or its major tributaries. A creek or run was usually wooded, affording timber for cabin, fences, and fuel as well as shelter from the howling gales of winter. The prospect of an adequate water supply for his family and his livestock was an equally important consideration. "Accustomed to some of the luxuries of the east," a Van Buren County pioneer recalled, "the settlers sought conveniences here, making their claims ' 'cordin' to wood 'n water.' My father placed his cabin in the border of an opening in the timber, near a spring, which fed a rivulet entering Chequest creek two miles above its mouth." ⁴⁷⁶

A small stream generally offered the richest soil on its bottom land for grazing and sometimes for crops. Game thrived along the banks of creeks, a fact that is attested by the large number of streams named for the beaver, deer, bear, and other wild life. W J McGee was impressed with the slough lands along the Turkey and Little Wapsipinicon. The pioneer, according to McGee, "found them inhabited by geese, ducks, cranes, herons, and other wild fowl, which nested year after year in their impassable expanses of morass; he found them clothed with rushes and flags and skirted by belts of moisture-loving blue-joint grass rising higher than the head of a tall man". The pioneer also saw the "pyramidal houses of the half aquatic musk-

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rat" and the "cylindrical mud chimneys of the crayfish".⁴⁷⁷

Nor should the supply of fresh fish that was there for the taking be overlooked in appraising the value of the "little rivers". In 1860 a Wheatland pioneer caught a twenty-four-pound pickerel in Yankee Run, a small tributary of the Wapsipinicon that was navigable for large fish during high water. In the following year a St. Ansgar pioneer took six pickerel weighing a total of twenty-seven and one-half pounds out of the Cedar River near its headwaters.⁴⁷⁸ Not a few early settlers thought in terms of mills, and small streams were easier to dam than large ones. Finally, some of the first squatters were influenced by the possibility of carrying their crops to market in rough-hewn barges during the spring freshets. The economic significance of the little rivers of Iowa can scarcely be exaggerated.

Many of the significant events in Iowa history occurred on the banks of the lesser streams. The first fort in the Iowa country was erected on Sny Magill Slough by Pierre Paul Marin in 1738. The first permanent settlement in Iowa was made by Julien Dubuque at the mouth of Catfish Creek in 1788. The first school in Iowa was taught by Berryman Jennings in 1830 in a rude log cabin near a "small creek" emptying into the Mississippi in Lee County. On October 19, 1834, eleven people organized the Long Creek Baptist church in the rude cabin of Noble Hously in Des Moines County. It was the first church of the Baptist denomination established in Iowa. The first religious service west of the Des Moines River in Iowa was held on the bank of Chequest Creek in August of 1837.⁴⁷⁹

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Events that have occurred along the little rivers of Iowa might be recounted at length; to do so would simply be a narration of the history of the State itself. Though the early economic advantages which the creeks afforded to the pioneers may be lost, the recreational benefits are still very great. Iowans might well hearken to the words of Robert Louis Stevenson: "There's no music like a little river's. It plays the same tune (and that's the favorite) over and over again, and yet does not weary of it like men fiddlers. It takes the mind out of doors; and though we should be grateful for good houses, there is, after all, no house like God's out-of-doors. And lastly, sir, it quiets a man down like saying his prayers." ⁴⁸⁰

Henry Van Dyke also found precious qualities in little rivers. "A river is the most human and companionable of all inanimate things. It has a life, a character, a voice of its own, and is as full of good fellowship as a sugarmaple is of sap. It can talk in various tones, loud or low, and of many subjects, grave and gay. . . . For real company and friendship, there is nothing outside of the animal kingdom that is comparable to a river." ⁴⁸¹

NOTES AND REFERENCES

¹ Esther Singleton, *Great Rivers of the World*. This interesting volume contains brief sketches of notable waterways by such writers as Victor Hugo, Charles Dickens, Robert Louis Stevenson, and Henry D. Thoreau. See also John T. Faris, *The Romance of the Rivers*, and Lewis R. Freeman, *Many Rivers*.

² *The World Almanac*, 1940, pp. 544-549; N. S. Shaler, *Sea and Land*. The effort to improve harbors and rivers in the United States and throughout the world is graphically revealed in such documents as the *Preliminary Report of the Inland Waterways Commission* (1909) and the *National Waterways Commission Report* (1912).

³ *Resources and Opportunities of the Mid-Continent Area of the United States*. This illustrated booklet issued by the Mississippi Valley Association in 1940 contains much valuable information on the growth of transportation in the Mississippi Valley.

⁴ Census Bureau, Press release on "Housing Units in Iowa", December 26, 1940.

⁵ Many of the decisive battles of the world's history were fought on the banks of rivers. The barrier which the English Channel presents to blitzkrieg tactics illustrates the significance of rivers and small bodies of water even in modern warfare.

⁶ Consult the following *Palimpsest* articles: J. E. Briggs, "When Iowa Was Young", Vol. 6, pp. 117-127; W. J. Petersen, "Perrot's Mines" and "Jean Marie Cardinal", Vol. 12, pp. 405-420. See also B. E. Mahan, *Old Fort Crawford and the Frontier*, pp. 49-64; W. J. Petersen, *Steamboating on the Upper Mississippi*, pp. 167-203.

⁷ For more than two centuries upper Mississippi travelers recounted the story of such legends as the dreaded Piasa and the beautiful Winona. The story of Wapsie and Pinicon is not quite so old, the legend probably alluding to a period after 1740.

⁸ S. J. Adair Fitz-Gerald, *Stories of Famous Songs* (1898); J. J. Geller, *Famous Songs and their Stories*, pp. 166, 167, 245, 246; E. B. Marks, *They All Sang*, pp. 223-269. This last volume contains a list of 1545 popular songs that have appeared during the past century. The writer is indebted to Miss Dorris Feldman for a copy of "Oneota" published by the Marsh Music House at Decorah, Iowa.

⁹ The number of books dealing with rivers is almost unlimited. The "Rivers of America" series illustrates how publishers endeavor to capitalize on this ever popular subject.

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¹⁰ John Playfair, *Illustration of the Huttonian Theory of the Earth*, p. 102, quoted in I. C. Russell, *Rivers of North America*, p. iii.

¹¹ G. F. Kay and J. H. Lees, *Sketch of the Geology of Iowa*; Frank Leverett, "Old Channels of the Mississippi in Southeastern Iowa" in the *Annals of Iowa* (Third Series), Vol. 5, pp. 38-51.

¹² C. R. Keyes, "Prehistoric Man in Iowa" in *The Palimpsest*, Vol. 8, pp. 185-229.

¹³ Jacob Van der Zee, "The Roads and Highways of Territorial Iowa" in *The Iowa Journal of History and Politics*, Vol. 3, pp. 175-225; J. E. Brindley, *History of Road Legislation in Iowa*, pp. 1-76.

¹⁴ *The History of Cedar County, Iowa* (1901), Vol. 1, pp. 326-327.

¹⁵ W. J. Petersen, "Captains and Cargoes of Early Upper Mississippi Steamboats" in *The Wisconsin Magazine of History*, Vol. 13, pp. 224-240; *Upper Mississippi River Bulletin*, January, 1941.

¹⁶ W. J. Petersen, *Steamboating on the Upper Mississippi*, pp. 81-89, 483-486; *The Des Moines Register*, June 27, 1940.

¹⁷ J. A. Swisher, *Iowa: Land of Many Mills*, pp. 28-40, 213-218, 234.

¹⁸ *American State Papers, Public Lands*, Vol. 4, p. 801; B. H. Wilson, "Over the Rapids" and "The Des Moines Rapids Canal" in *The Palimpsest*, Vol. 4, pp. 361-378, Vol. 5, pp. 117-132; "Inland Waterways" in *Fortune*, October, 1931.

¹⁹ Statistical data on flood losses in Iowa may be secured from the *Monthly Review of the Iowa Weather and Crop Service* which has been published regularly since 1890. The title of this report was enlarged and changed in 1906, in 1907, and in 1914, in the latter year reading *Climatological Data/ Iowa Section/ In Cooperation with the Iowa Weather and Crop Service*. During the entire half century of its publication the words *Iowa Weather and Crop Service* have been retained and it is so cited throughout the remainder of this book. A complete file is in the library of the State Historical Society of Iowa.

The reports of United States Army Engineers on Iowa streams also furnish much flood loss data. It is therefore possible to decide whether the losses sustained over a long period of time would justify protective engineering.

²⁰ *Annual Report of the State Highway Commission*, 1937, pp. 6, 7, 44, 45.

²¹ In recent years, of course, large communities and manufacturing plants have been restrained from disposing of their sewage in this manner, not only because of its deleterious effect on health but also because it destroys fish and other wild life.

²² *Iowa's State Parks and Preserves* (1937).

²³ F. E. Williams, "The Geography of the Mississippi Valley" in *The Annals of the American Academy of Political and Social Science*, Vol. 135, pp. 7-11.

²⁴ H. C. Shetrone, *The Mound-Builders*, pp. 1-33, 291-408. A good account of

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the mound builders in the Hawkeye State is found in C. R. Keyes, "Prehistoric Man in Iowa" in *The Palimpsest*, Vol. 8, pp. 185-229.

²⁵ C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plate 33. For an account of the Indians of Iowa see *The Palimpsest*, Vol. 9, pp. 33-85.

²⁶ Warren Upham, *Minnesota Geographic Names*, pp. 4-6; J. V. Brower, *Itasca State Park*, pp. 273, 274.

²⁷ E. G. Bourne, *Spain in America*, pp. 162-167.

²⁸ R. G. Thwaites, *The Jesuit Relations*, Vol. 59, pp. 87-163.

²⁹ W. J. Petersen, "Some Beginnings in Iowa" in *The Iowa Journal of History and Politics*, Vol. 28, pp. 3-54, and "The Mines of Spain" in *The Palimpsest*, Vol. 12, pp. 405-440; J. E. Briggs, *Two Connecticut Yankees*, Vol. 7, pp. 15-29.

³⁰ Elliott Coues, *The Expeditions of Zebulon Montgomery Pike*, Vol. 1, pp. viii, ix, 1-215.

³¹ W. J. Petersen, "Veritas Caput: Itasca" in *Minnesota History*, Vol. 18, pp. 180-185; J. V. Brower, *Itasca State Park*, pp. 94-117. The University of Minnesota has maintained a Forest School summer session at Itasca State Park since 1908. The yearly bulletin issued by the University contains interesting information about the park.

³² W. J. Petersen, *Steamboating on the Upper Mississippi*, pp. 22, 23. During the summer of 1938 the author paddled through the wild rice of Lake Itasca to Schoolcraft Island and visited every trail in Itasca State Park. He then followed the Mississippi from its source to St. Paul.

³³ Warren Upham, *Minnesota Geographic Names*, pp. iii-viii, 1-6; W. W. Folwell, *A History of Minnesota*, Vol. 1, pp. 1-130.

³⁴ F. E. Williams, "The Geography of the Mississippi Valley" and E. A. Sherman, "What Forests Can Do for the Mississippi River" in *The Annals of the American Academy of Political and Social Science*, Vol. 135, pp. 7-11, 45-49.

³⁵ The lower Mississippi has found many chroniclers of whom two are most noted: E. W. Gould, *Fifty Years on the Mississippi* and Mark Twain, *Life on the Mississippi*.

³⁶ Some idea of the magnitude of the problem of flood control may be gathered by studying the report of a single session of Congress on this subject. See the three massive volumes entitled *Control of Floods in the Alluvial Valley of the Lower Mississippi River*, House Document 798, 71st Congress, 3d Session. Two extensive reports by the American Red Cross reveal the serious nature of flood control: *The Mississippi Valley Flood Disaster of 1927* and *Ohio-Mississippi Valley Flood Disaster of 1937*.

³⁷ F. E. Williams, "The Geography of the Mississippi Valley" in *The Annals of the American Academy of Political and Social Science*, Vol. 135, pp. 10, 11.

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³⁸ An excellent guide to early travelers in the Mississippi Valley is S. J. Buck, *Travels and Descriptions, 1765-1865*.

³⁹ *The Spirit of the Times*, August 24, 1844, quoted in T. D. Clark, *The Rampaging Frontier*, p. 79.

⁴⁰ Zadok Cramer, *The Navigator*, p. 144.

⁴¹ H. M. Brackenridge, *Views of Louisiana*, pp. 96, 97.

⁴² W. H. Keating, *Narrative of an Expedition to the Source of St. Peter's River*, Vol. 1, pp. 256, 257.

⁴³ Christiana H. Tillson, *A Woman's Story of Pioneer Illinois*, pp. 22, 23.

⁴⁴ J. C. Beltrami, *A Pilgrimage in Europe and America*, Vol. 2, pp. 101, 483, 536, 541, 542.

⁴⁵ R. B. Haughton, "The Influence of the Mississippi River Upon the Early Settlement of Its Valley" in *Publications of the Mississippi Historical Society*, Vol. 4, p. 474.

⁴⁶ *Alton Spectator*, January 27, 1833.

⁴⁷ W. J. Petersen, *Steamboating on the Upper Mississippi*, pp. 48-67; *The Miners' Express* (Dubuque), June 23, 1843.

⁴⁸ W. J. Petersen, "The Lead Traffic on the Upper Mississippi, 1823-1848", in *The Mississippi Valley Historical Review*, Vol. 17, pp. 72-97.

⁴⁹ W. J. Petersen, "Captains and Cargoes of Early Upper Mississippi Steamboats" in *The Wisconsin Magazine of History*, Vol. 13, pp. 224-240.

⁵⁰ G. B. Merrick, "Joseph Reynolds and the Diamond Jo Line Steamers, 1862-1911" in the *Proceedings of the Mississippi Valley Historical Association*, Vol. 8, pp. 217-261.

⁵¹ *Dubuque Telegraph-Herald*, February 3, 5, 7, 9, 10, 11, 1911.

⁵² *Annual Report of the Inland Waterways Corporation*, 1939, p. 21; *The Democrat* (Davenport), July 21, 1939. The writer has in his possession the reports of earnings of the Diamond Jo Line boats during the declining years of the company.

⁵³ F. T. Oldt, *History of Dubuque County*, pp. 48, 56; *Fort Madison Patriot*, July 11, 1838; *Iowa News* (Dubuque), March 31, July 21, 1838; J. A. Swisher, *Iowa: Land of Many Mills*, pp. 65-76; W. A. Blair, *A Raft Pilot's Log*, pp. 33-54.

⁵⁴ W. A. Blair, *A Raft Pilot's Log*, pp. 203-308. A popular but inaccurate account is C. E. Russell, *A-Rafting on the Mississipp*.

⁵⁵ *Harper's Magazine*, Vol. 26, p. 415. The quotation is from the *Editor's Table* of February, 1863, and is entitled "The Indivisibility of the Nation". This department was begun in 1851 and was run for nearly twelve years. It was written by

Notes and References

Taylor Lewis and A. A. Liscomb, with a few items by Samuel Osgood, E. P. Whipple, and Theodore Sedgwick. See F. L. Mott, *A History of American Magazines*, Vol. 2, p. 389. Mark Twain used this quotation in the beginning of his *Life on the Mississippi*.

⁵⁶ T. B. Thorpe, *Mysteries of the Backwoods*, pp. 170-177. This is also quoted in *The Spirit of the Times*, Vol. 15, pp. 576-577.

⁵⁷ Winston Churchill, *Blood, Sweat, and Tears*, p. 351.

⁵⁸ A good brief account of the geology of the river and region may be found in J. H. Lees, "The Geology and Topography of Northeastern Iowa" in *The Iowa Journal of History and Politics*, Vol. 31, pp. 3-20.

⁵⁹ See the unpublished manuscript on the Upper Iowa River to be found in the United States Engineers Office at St. Paul, Minnesota; Committee on Water Resources, Iowa State Planning Board, *Water Use and Conservation*, Vol. 4, pp. 1-6. This volume is one of a series of six mimeographed books prepared under the supervision of O. J. Baldwin in 1936.

⁶⁰ Samuel Calvin, "Geology of Howard County" in the *Iowa Geological Survey*, Vol. 13, pp. 25-44; *Iowa: A Guide to the Hawkeye State*, p. 366.

⁶¹ Samuel Calvin, "Geology of Winneshiek County" in the *Iowa Geological Survey*, Vol. 16, pp. 43-59; W J McGee, *The Pleistocene History of Northeastern Iowa*, pp. 205-209; Henry Van Dyke, *Little Rivers*, p. 12; Water Resources Division, Iowa State Planning Board, *Stream Flow Records of Iowa: 1873-1932*, p. 176; *Iowa's State Parks and Preserves* (1937), pp. 58, 59.

⁶² Samuel Calvin, "Geology of Allamakee County" in the *Iowa Geological Survey*, Vol. 4, pp. 39-49; W J McGee, *The Pleistocene History of Northeastern Iowa*, pp. 204-205; J. H. Lees, "The Geology and Topography of Northeastern Iowa" in *The Iowa Journal of History and Politics*, Vol. 31, pp. 17-20.

⁶³ W J McGee, *The Pleistocene History of Northeastern Iowa*, p. 204; J. H. Lees, "The Geology and Topography of Northeastern Iowa" in *The Iowa Journal of History and Politics*, Vol. 31, pp. 17, 18; E. M. Hancock, *Past and Present of Allamakee County*, Vol. 1, pp. 256, 257; E. C. Bailey, *Past and Present of Winneshiek County*, Vol. 1, p. 47; W. J. Petersen, "Historical Setting of the Mound Region in Northeastern Iowa" in *The Iowa Journal of History and Politics*, Vol. 31, pp. 50, 51. Mr. Charles Philip Hexom of Decorah, Iowa, writes that the Winnebago name for the Upper Iowa was "Wap-hoche-ni-la" or "Iowa" river. This was also called "Wap-hoche-ni-sha-nuk-la", according to Mr. Hexom. In a letter to the writer, dated February 11, 1941, Mr. Hexom tells of the efforts of a Decorah citizen to secure the adoption of the word "Oneota" by special act of the State legislature.

⁶⁴ C. R. Keyes, "Antiquities of the Upper Iowa" in *The Palimpsest*, Vol. 15, pp. 339-354.

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⁶⁵ W. J. Petersen, "Historical Setting of the Mound Region in Northeastern Iowa" in *The Iowa Journal of History and Politics*, Vol. 31, pp. 47-76.

⁶⁶ W. J. Petersen, *Steamboating on the Upper Mississippi*, p. 345.

⁶⁷ *Iowa: A Guide to the Hawkeye State*, pp. 344-346. For population and agricultural statistics see the unpublished United States Engineers report on the Upper Iowa River with its accompanying map. See also *The Book of Iowa*, pp. 84-89, 118, 119. This is published by the State of Iowa from Iowa's Industrial Survey.

⁶⁸ J. A. Swisher, *Iowa: Land of Many Mills*, pp. 86-88; *Upper Iowa River, Iowa*, in the office of the United States Army Engineers at St. Paul.

⁶⁹ Jonathan Carver, *Travels Through the Interior Parts of North-America, in the Years 1766, 1767, and 1768*, pp. i-xvi, 48-51. A copy of the first edition printed in London in 1778 is in the library of the State Historical Society of Iowa. The publication of Kenneth Roberts's *Northwest Passage* has stimulated interest in the personality and career of Jonathan Carver. Iowans will enjoy the sketch of Carver's life by J. E. Briggs in *The Palimpsest*, Vol. 7, pp. 15-23, 30-32.

⁷⁰ Elliott Coues, *The Expeditions of Zebulon Montgomery Pike*, Vol. 1, pp. 38, 41, 305, 355.

⁷¹ S. H. Long, "Voyage in a Six-Oared Skiff to the Falls of Saint Anthony in 1817" in the *Minnesota Historical Society Collections*, Vol. 2, p. 10.

⁷² J. C. Beltrami, *A Pilgrimage in Europe and America*, Vol. 2, pp. 175, 196; W. H. Keating, *Narrative of an Expedition to the Source of St. Peter's River . . . Performed in the year 1823*, Vol. 1, pp. 254, 255, 273-275, and map opposite page one. Just below the mouth of the Yellow River the soldiers accompanying this expedition almost mutinied as a result of having "broached the keg of liquor, and helped themselves to its contents so bountifully as to be soon affected by it."

⁷³ C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plates 28, 29, 31-B; A. M. Lea, *Notes on Wisconsin Territory, with a Map*. A reprint of this rare volume was issued by the State Historical Society of Iowa in 1935 under the title: *The Book That Gave Iowa Its Name*.

⁷⁴ E. M. Hancock, *Past and Present of Allamakee County*, Vol. 1, p. 469. According to Hancock the belt of forest on the south side of the river consisted of the "best varieties of oak, walnut, butternut, ash, hickory, maple, with basswood and poplar".

⁷⁵ Samuel Calvin, "Geology of Allamakee County" and "Geology of Winneshiek County" in the *Iowa Geological Survey*, Vol. 4, pp. 51-54, Vol. 16, pp. 57, 58; W. J. McGee, *The Pleistocene History of Northeastern Iowa*, pp. 358, 359, 373, 374, 381, 421, and also the charts on pages 360, 361, and 366, and the maps opposite pages 359 and 361. Water Resources Division, Iowa State Planning Board, *Stream Flow Records of Iowa: 1873-1932*, p. 562; *Iowa: A Guide to the Hawkeye State*,

Notes and References

- p. 348; Committee on Water Resources, Iowa State Planning Board, *Water Use and Conservation in Iowa*, Vol. 4, pp. 1-8.
- ⁷⁶ A. T. Andreas, *Illustrated Historical Atlas of the State of Iowa* (1875), p. 349; *Waukon Republican and Standard*, October 23, 1929; Ellison Orr, *Hunting An Old Dam Site*, a four page pamphlet issued by the author in 1930. See also J. A. Swisher, *Iowa: Land of Many Mills*, pp. 41, 42.
- ⁷⁷ B. E. Mahan, "The School on Yellow River" in *The Palimpsest*, Vol. 5, pp. 446-452.
- ⁷⁸ E. M. Hancock, *Past and Present of Allamakee County*, Vol. 1, pp. 47-65, 233-245, 271-273; *Weekly Times* (Dubuque), August 18, 1859.
- ⁷⁹ A. T. Andreas, *Illustrated Historical Atlas of Iowa* (1875), pp. 349, 350; E. M. Hancock, *Past and Present of Allamakee County*, Vol. 1, pp. 241, 242, 247.
- ⁸⁰ J. A. Swisher, *Iowa: Land of Many Mills*, pp. 88, 89.
- ⁸¹ *Wisconsin Historical Collections*, Vol. 11, pp. 147-152, Vol. 12, pp. 49-56; W. J. Petersen, "Jean Marie Cardinal" in *The Palimpsest*, Vol. 12, pp. 414-420.
- ⁸² Eliphalet Price, "The Origin and Interpretation of the Names of the Rivers and Streams of Clayton County" in the *Annals of Iowa* (First Series), Vol. 4, p. 710; *Wisconsin Historical Collections*, Vol. 9, pp. 207, 210, 248.
- ⁸³ C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plates 24, 29, 31-B, 32-A; A. M. Lea, *Notes on Wisconsin Territory, with a Map*; J. H. Colton, *Guide for the Territory of Iowa, with a Correct Map* (1839).
- ⁸⁴ *Wisconsin Historical Collections*, Vol. 6, p. 196, Vol. 10, p. 502; Elliott Coues, *The Expeditions of Zebulon Montgomery Pike*, Vol. 1, p. 32; W. J. Petersen, "Kearny in Iowa" in *The Palimpsest*, Vol. 11, pp. 310, 311. Kearny undoubtedly meant the Fox Indian village rather than that of the Sioux. All the other travelers beginning with Perrault alluded to the presence of the confederated tribe of Sauk and Fox in this region.
- ⁸⁵ J. C. Beltrami, *A Pilgrimage in Europe and America*, Vol. 2, pp. 169, 196.
- ⁸⁶ C. A. Murray, *Travels in North America*, Vol. 2, pp. 110-129.
- ⁸⁷ Henry Lewis, *Das Illustrierte Mississippithal*, pp. vi, 155.
- ⁸⁸ A. M. Lea, *Notes on Wisconsin Territory, with a Map*, p. 33; *History of Clayton County, Iowa* (1882), p. 506.
- ⁸⁹ Jesse Williams, *A Description of the United States Lands in Iowa*, pp. 144, 145, 172, 173.
- ⁹⁰ W. D. Wilson, *A Description of Iowa and Its Resources*, pp. 28-32, 35.
- ⁹¹ *History of Fayette County, Iowa* (1878), p. 386.
- ⁹² *Preliminary Examination Report for Flood Control Turkey River, Iowa*, p.

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5, a typewritten report in the United States Army Engineers Office at Rock Island, Illinois; R. E. Price, *History of Clayton County, Iowa*, Vol. 1, pp. 196, 446-449.

⁹³ *Turkey River, Iowa*, House Document No. 98, 73rd Congress, 1st Session, p. 13, and Sheet No. 1. This is a report with maps and charts submitted on March 2, 1933, by the Chief of Engineers, United States Army, to the Secretary of War, presenting a plan for the improvement of the Turkey River for navigation, development of water power, control of floods, and needs of irrigation.

⁹⁴ Water Resources Division, Iowa State Planning Board, *Stream Flow Records of Iowa, 1873-1932*, pp. 186, 554, 555; Committee on Water Resources, Iowa State Planning Board, *Water Use and Conservation in Iowa*, Vol. 4, pp. 1-7.

⁹⁵ *Turkey River, Iowa*, House Document No. 98, 73rd Congress, 1st Session, pp. 14, 15, 62-64; *History of Clayton County, Iowa* (1882), p. 528.

⁹⁶ R. E. Price, *History of Clayton County, Iowa*, Vol. 1, p. 192.

⁹⁷ *Elkader Register*, June 17, 24, 1880.

⁹⁸ *Globe-Journal* (Dubuque), May 23, 1902.

⁹⁹ *Turkey River, Iowa*, House Document No. 98, 73rd Congress, 1st Session, pp. 15-21, 25, 29, 73-78.

¹⁰⁰ *The Guttenberg Press*, August 22, 1918; *Dubuque Telegraph-Herald*, February 26, 27, 1922.

¹⁰¹ C. R. Keyes, "A Unique Survey" in *The Palimpsest*, Vol. 11, pp. 214-226.

¹⁰² Jacob Van der Zee, "The Neutral Ground" in *The Iowa Journal of History and Politics*, Vol. 13, pp. 311-348; B. E. Mahan, "Moving the Winnebago" in *The Palimpsest*, Vol. 3, pp. 33-52.

¹⁰³ W. J. Petersen, "History of Northeastern Iowa" in *The Iowa Journal of History and Politics*, Vol. 31, p. 80; *Iowa: A Guide to the Hawkeye State*, pp. 349, 362, 363.

¹⁰⁴ *Iowa: A Guide to the Hawkeye State*, pp. 359, 360, 444.

¹⁰⁵ J. A. Swisher, "Some Historic Sites in Iowa" in *The Iowa Journal of History and Politics*, Vol. 32, pp. 207, 208.

¹⁰⁶ *Iowa: A Guide to the Hawkeye State*, pp. 347, 349.

¹⁰⁷ Ramona Evans, "Dvorak at Spillville" in *The Palimpsest*, Vol. 11, pp. 113-118.

¹⁰⁸ F. W. Hodge, *Handbook of American Indians*, Vol. 1, pp. 303-305, 792, 793; A. R. Fulton, *The Red Men of Iowa*, pp. 384, 427, 542; *The Palimpsest*, Vol. 9, p. 40, Vol. 8, p. 299. Fulton declares the name Maquoketa is a Chippewa word signifying "high bank".

¹⁰⁹ A. M. Lea, *Notes on Wisconsin Territory, with a Map*, pp. 13, 14; Jesse

Notes and References

Williams, *A Description of the United States Lands in Iowa*, p. 175; Isaac Galland, *Galland's Iowa Emigrant*, p. 21.

¹¹⁰ Water Resources Division, Iowa State Planning Board, *Stream Flow Records of Iowa, 1873-1932*, pp. 489-491, 525, 526.

¹¹¹ Elliott Coues, *The Expeditions of Zebulon M. Pike*, Vol. 1, pp. 28, 32, 33, 293; J. C. Beltrami, *A Pilgrimage in Europe and America*, Vol. 2, p. 196.

¹¹² C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plates 29, 32-A; A. M. Lea, *Notes on Wisconsin Territory, with a Map*, see the map; J. H. Colton, *Guide for the Territory of Iowa* (1839).

¹¹³ W. J. McGee, *The Pleistocene History of Northeastern Iowa*, pp. 215, 216, 360, 366, 373, 428, 429.

¹¹⁴ Thomas Forsyth, "Journal of a Voyage from St. Louis to the Falls of St. Anthony, in 1819" in the *Wisconsin Historical Collections*, Vol. 6, pp. 194, 195.

¹¹⁵ H. R. Schoolcraft, *Narrative Journal of Travels . . . to the Sources of the Mississippi River in the Year 1820*, p. 346.

¹¹⁶ A. M. Lea, *Notes on Wisconsin Territory, with a Map*, pp. 33, 41, 42.

¹¹⁷ *The History of Dubuque County, Iowa* (1880), pp. 354, 355; *Iowa News* (Dubuque), November 18, 1837; T. H. Sheldon, "Narrative of a Pioneer of Wisconsin and Pike's Peak" in *The Wisconsin Magazine of History*, Vol. 12, pp. 409, 410. The Peru and Durango post offices are listed in the Newton D. Mereness card index of Iowa post offices in the library of the State Historical Society of Iowa.

¹¹⁸ W. J. Petersen, "Julien Dubuque" in *The Palimpsest*, Vol. 12, pp. 426, 427.

¹¹⁹ W. J. Petersen, "Julien Dubuque" in *The Palimpsest*, Vol. 12, pp. 421-433.

¹²⁰ W. J. Petersen, "Perrot's Mines" in *The Palimpsest*, Vol. 12, pp. 405-413; *Wisconsin Historical Collections*, Vol. 16, p. 181; C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plates 23-A, 24, 29, 31-B, 32-A; A. M. Lea, *Notes on Wisconsin Territory, with a Map*, p. 40.

¹²¹ Elliott Coues, *The Expeditions of Zebulon M. Pike*, Vol. 1, pp. 32, 209, 294; H. R. Schoolcraft, *Narrative Journal of Travels . . . to the Sources of the Mississippi in the Year 1820*, pp. 342, 343; J. C. Beltrami, *A Pilgrimage in Europe and America*, Vol. 2, pp. 163-165.

¹²² A. M. Lea, *Notes on Wisconsin Territory, with a Map*, p. 40.

¹²³ George Catlin, *North American Indians*, Vol. 2, pp. 130, 148, 149, and Plate 129.

¹²⁴ W. J. Petersen, "Jean Marie Cardinal" and "The Eldorado of Iowa" in *The Palimpsest*, Vol. 12, pp. 414-420, Vol. 21, pp. 345-352; *Steamboating on the Upper Mississippi*, pp. 287, 288.

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¹²⁵ W. J. Petersen, "Julien Dubuque" in *The Palimpsest*, Vol. 12, pp. 421-433.

¹²⁶ W J McGee, *The Pleistocene History of Northeastern Iowa*, pp. 216, 360, 373, 429, and maps opposite 358 and 360; Samuel Calvin and H. F. Bain, "Geology of Dubuque County" in the *Iowa Geological Survey*, Vol. 10, pp. 387-397. See also maps opposite pp. 396, 464, and 622.

¹²⁷ Pauline Grahame, "The Rockdale Flood" in *The Palimpsest*, Vol. 10, pp. 233-242; *The History of Dubuque County, Iowa* (1880), pp. 475-488.

¹²⁸ Unfortunately Lewis's publishers failed, and his book soon disappeared from the market. For a half century it remained virtually unknown in America. Then, in 1908, a copy was sold at auction in New York and a frantic search for additional copies of this rare item commenced. Less than twenty copies were owned in the United States in 1923 when a handsome reprint was published in German—Henry Lewis, *Das Illustrirte Mississippithal*, 1923, H. Schmidt & C. Gunther, Leipzig. J. Christian Bay wrote the introductory text. See pages iii-xii. George Lewis, a brother of Henry Lewis, settled in Victor, Iowa.

¹²⁹ Henry Lewis, *Das Illustrirte Mississippithal*, pp. 171-174. The plates mentioned in the text fall between pages 150 and 235.

¹³⁰ W J McGee, *The Pleistocene History of Northeastern Iowa*, pp. 216, 358, 360, 373; T. E. Savage, "Geology of Jackson County" in the *Iowa Geological Survey*, Vol. 16, pp. 575-577, 589, 590, 594-596.

¹³¹ W. J. Petersen, "Julien Dubuque" in *The Palimpsest*, Vol. 12, pp. 421-433; Thomas Forsyth, "Journal of a Voyage from St. Louis to the Falls of St. Anthony, in 1819" in the *Wisconsin Historical Collections*, Vol. 6, p. 196.

¹³² W. H. Keating, *Narrative of an Expedition to the Source of St. Peter's River . . . Performed in the year 1823*, Vol. 1, map opposite page 1.

¹³³ J. C. Beltrami, *A Pilgrimage in Europe and America*, Vol. 2, pp. 160, 161, 196.

¹³⁴ A. M. Lea, *Notes on Wisconsin Territory, with a Map*, p. 32; Thomas Forsyth, "Journal of a Voyage from St. Louis to the Falls of St. Anthony, in 1819" in the *Wisconsin Historical Collections*, Vol. 6, p. 194.

¹³⁵ A. T. Andreas, *Illustrated Historical Atlas of the State of Iowa* (1875), pp. 158, 361, 362; *The History of Jackson County, Iowa* (1879), pp. 679-688. See cards 50 and 826 in the Newton D. Mereness file of Iowa post offices in the library of the State Historical Society of Iowa.

¹³⁶ Welker Given, *A Luxemburg Idyll in Early Iowa*, a fifteen-page privately printed booklet; *Iowa: A Guide to the Hawkeye State*, pp. 160, 353, 354; *The History of Jackson County, Iowa* (1879), pp. 607, 608, 679-688; *Twelfth Census of the United States, 1900*, Vol. 1, p. 152; *Fifteenth Census of the United States, 1930*, Vol. 1, p. 375; Johannes Deindörfer, *Geschichte der Evangel.-Luth. Synode von Iowa und anderen Staaten* (1897), pp. 48, 347.

Notes and References

¹³⁷ C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plates 29, 32-A; A. M. Lea, *Notes on Wisconsin Territory, with a Map*; J. H. Colton, *Guide for the Territory of Iowa* (1839).

¹³⁸ *The History of Jackson County* (1879), p. 492; J. W. Ellis, *History of Jackson County*, Vol. 1, p. 554. See card 73 in the Newton D. Mereness file of Iowa post offices in the library of the State Historical Society of Iowa.

¹³⁹ Water Resources Division, Iowa State Planning Board, *Stream Flow Records of Iowa, 1873-1932*, p. 199; Committee on Water Resources, Iowa State Planning Board, *Water Use and Conservation in Iowa*, Vol. 4, pp. 1-6.

¹⁴⁰ W. J. McGee, *The Pleistocene History of Northeastern Iowa*, pp. 227, 360, 397-400, 429, 430; *Iowa's State Parks and Preserves* (1937), pp. 7, 8.

¹⁴¹ Much of the descriptive material for this area was provided by Thomas C. Tibbitts of Hopkinton, Iowa, an ardent nature lover and a member of the State Historical Society of Iowa.

¹⁴² *Iowa's State Parks and Preserves* (1937), p. 57; T. E. Savage, "Geology of Jackson County" in the *Iowa Geological Survey*, Vol. 16, pp. 584-588. In addition to maps of Jackson County this monograph contains some excellent pictures of the Natural Bridge and other Maquoketa Valley scenes.

¹⁴³ J. W. Ellis, *History of Jackson County, Iowa*, Vol. 1, pp. 500-522. This volume contains a full account of the dedication of the monument to Ansel Briggs at Andrew, Iowa. Governor B. F. Carroll and Ex-Governor William Larrabee were among the speakers. See also *Waterloo Courier*, April 22, 1940; *Iowa: A Guide to the Hawkeye State*, pp. 338, 450, 451.

¹⁴⁴ *Iowa News* (Dubuque), November 17, 1838; A. M. Lea, *Notes on Wisconsin Territory, with a Map*, p. 32; W. D. Wilson, *A Description of Iowa and Its Resources*, pp. 10, 22, 24, 36.

¹⁴⁵ *Report on the Maquoketa River*, pp. 14, 15. This is a typewritten report in the United States Engineers Office at Rock Island, Illinois. See also W. J. Petersen, "The Dairy Cattle Congress" in *The Palimpsest*, Vol. 15, pp. 357-386; *Iowa: A Guide to the Hawkeye State*, p. 451.

¹⁴⁶ *Iowa News* (Dubuque), August 5, 1837; *Dubuque Transcript* quoted in the *Iowa Capitol Reporter* (Iowa City), November 18, 1843.

¹⁴⁷ *Bellevue Courier* quoted in the *Dubuque Herald*, June 20, 1860.

¹⁴⁸ Quoted in the *Muscatine Journal*, May 17, 1862.

¹⁴⁹ *The History of Jackson County, Iowa* (1879), p. 493; J. W. Ellis, *History of Jackson County*, Vol. 1, p. 586; *Burlington Post*, October 19, 1918, October 18, 1919, December 20, 1919; *Proceedings of the Seventeenth Annual Meeting of the Board of Supervising Inspectors of Steam Vessels* (1869), pp. 183-185. The writer has five scrapbooks containing the 257 chapters about upper Mississippi steamboats

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compiled by George B. Merrick and Fred A. Bill and published in the *Burlington Post*.

¹⁵⁰ *The History of Jones County, Iowa* (1879), pp. 349, 350; *The History of Jackson County, Iowa* (1879), pp. 342, 343; *Laws of Iowa*, 1870, Chapter 15; *United States Statutes at Large*, Vol. 15, p. 257, July 13, 1868. Excellent illustrations of the cost of early bridges may be found in the histories of Jones and Jackson counties.

¹⁵¹ J. E. Briggs, "The Flood of 1851" in *The Palimpsest*, Vol. 15, pp. 207-215; Tacitus Hussey, "The Flood of 1851" in the *Annals of Iowa* (Third Series), Vol. 5, p. 407. The report of the flood on the Maquoketa was gleaned from the *Davenport Iowa Democratic Enquirer* of June 6, 1851, and the *Dubuque Herald*, June 8, 1851.

¹⁵² T. C. Geary, "Flood Time at Cascade" in *The Palimpsest*, Vol. 17, pp. 235-246; *Dubuque Telegraph-Herald*, June 16, 17, 18, 1925; *Iowa Weather and Crop Service*, Vol. 36, pp. 45-47; *Report on the Maquoketa River*, pp. 50-53. This is a typewritten report in the United States Engineers Office at Rock Island, Illinois.

¹⁵³ *Report on the Maquoketa River*, pp. 14-20. A considerable amount of data on the Maquoketa Valley is contained in Committee on Water Resources, Iowa State Planning Board, *Water Use and Conservation*, Vol. 4.

¹⁵⁴ H. C. Chappell and K. J. Chappell, *History of Buchanan County, Iowa*, Vol. 1, pp. 331-339; L. H. Andrews, *The Wapsie-Pinnekon Legend* (Quasqueton, Iowa: Frank Vierth. 1906).

¹⁵⁵ J. C. Hartman, *History of Black Hawk County, Iowa*, Vol. 1, p. 377.

¹⁵⁶ *Wisconsin Historical Collections*, Vol. 17, pp. 37, 38, 206, 223, 316.

¹⁵⁷ H. E. Downer, *History of Davenport and Scott County, Iowa*, Vol. 1, pp. 65, 66; C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plates 29, 31, 32-A. See also the works of the various authors cited.

¹⁵⁸ Water Resources Division, Iowa State Planning Board, *Stream Flow Record of Iowa: 1873-1932*, pp. 215, 225, 280, 329, 396; Committee on Water Resources, Iowa State Planning Board, *Water Use and Conservation in Iowa*, Vol. 4, pp. 1-6.

¹⁵⁹ W J McGee, *Pleistocene History of Northeastern Iowa*, p. 366; *Iowa's State Parks and Preserves* (1937), pp. 46, 47; *Report on the Wapsipinicon River*, p. 9. This is an unpublished typewritten report prepared by the United States Engineers of the Rock Island District. A copy may be found in their office at Rock Island.

¹⁶⁰ H. C. Chappell and K. J. Chappell, *History of Buchanan County, Iowa*, Vol. 1, pp. 339-345; *Report on the Wapsipinicon River*, pp. 35, 40.

¹⁶¹ *Iowa Weather and Crop Service*, Vol. 3, July, 1892, pp. 7, 12, Vol. 13, May,

Notes and References

1902, pp. 7, 11; H. C. Chappell and K. J. Chappell, *History of Buchanan County, Iowa*, Vol. 1, pp. 342-345; *Muscatine Journal*, June 3, 1903.

¹⁶² A. M. Lea, *Notes on Wisconsin Territory, with a Map*, p. 32.

¹⁶³ J. B. Newhall, *Sketches of Iowa, or the Emigrants' Guide*, p. 41; H. C. Chappell and K. J. Chappell, *History of Buchanan County, Iowa*, Vol. 1, pp. 590, 591.

¹⁶⁴ Willard Barrows, "History of Scott County, Iowa" in the *Annals of Iowa* (First Series), Vol. 2, p. 244; H. E. Downer, *History of Davenport and Scott County, Iowa*, Vol. 1, p. 439; H. C. Chappell and K. J. Chappell, *History of Buchanan County, Iowa*, Vol. 1, pp. 339-345; J. C. Parish, "The Old Military Road" in *The Palimpsest*, Vol. 2, pp. 33-34; *The History of Jones County, Iowa* (1879), pp. 349, 350.

¹⁶⁵ *Laws of the Territory of Iowa, 1841-42*, p. 10.

¹⁶⁶ H. C. Chappell and K. J. Chappell, *History of Buchanan County, Iowa*, Vol. 1, pp. 81, 82.

¹⁶⁷ *Weekly Times* (Dubuque), December 30, 1858, January 6, 1859.

¹⁶⁸ *Iowa: A Guide to the Hawkeye State*, pp. 360, 365, 367, 436; "Through European Eyes" in *The Palimpsest*, Vol. 1, pp. 158-162. For a full account of the Mennonites see Melvin Gingerich, *The Mennonites in Iowa*.

¹⁶⁹ W. J. Petersen, "The Lexington of the North" in *The Palimpsest*, Vol. 13, pp. 333-396.

¹⁷⁰ P. B. Wolfe, *History of Clinton County, Iowa*, Vol. 1, pp. 419-427.

¹⁷¹ J. E. Briggs, *History of Social Legislation in Iowa*, pp. 78, 79; *The History of Jones County, Iowa* (1879), pp. 457, 458.

¹⁷² B. L. Wick, "George W. Matsell" in *The Palimpsest*, Vol. 5, pp. 237-248.

¹⁷³ *The History of Linn County, Iowa* (1878), pp. 594-596; L. A. Brewer and B. L. Wick, *History of Linn County, Iowa*, Vol. 1, pp. 281-285; *Iowa: A Guide to the Hawkeye State*, pp. 338-341. The information concerning the Waubeek post office is from card 1258 in the Newton D. Mereness file of Iowa post offices in the library of the State Historical Society of Iowa.

¹⁷⁴ J. F. Grawe, *History of Bremer County, Iowa*, Vol. 1, pp. 245-254; *Iowa: A Guide to the Hawkeye State*, pp. 360, 366, 470.

¹⁷⁵ A. M. Lea, *Notes on Wisconsin Territory, with a Map*, pp. 28, 29.

¹⁷⁶ J. N. Nicollet, *Report of the Upper Mississippi River*, 26th Congress, 2nd Session, Senate Document 237, p. 22; J. B. Newhall, *Sketches of Iowa*, pp. 40, 41, 72, 73, 99, 100.

¹⁷⁷ J. C. Hartman, *History of Black Hawk County, Iowa*, Vol. 1, pp. 149, 215; N. H. Parker, *Iowa As It Is in 1857*, pp. 35, 53, 73.

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¹⁷⁸ See E. W. Clement, "Jesse Clement: A Yankee Westernized" in *The Iowa Journal of History and Politics*, Vol. 38, pp. 234-281. The article is followed by a sampling of letters written by Clement during the winter of 1858-1859 for the *Weekly Times* of Dubuque, Iowa.

¹⁷⁹ *Weekly Times* (Dubuque), January 6, February 3, 1859.

¹⁸⁰ A. R. Fulton, *The Red Man of Iowa*, p. 432; Z. M. Pike, *An Account of Expeditions to the Sources of the Mississippi, and through the Western Parts of Louisiana* (1810), Appendix to Part 1, p. 43; J. N. Nicollet, *Report of the Upper Mississippi River*, p. 22.

¹⁸¹ C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plates 29 and 32-A.

¹⁸² C. J. Kappler, *Indian Affairs, Laws and Treaties*, Vol. 2, p. 254.

¹⁸³ J. N. Nicollet, *Report of the Upper Mississippi River*, p. 22.

¹⁸⁴ A. M. Lea, *Notes on Wisconsin Territory, with a Map*, p. 28.

¹⁸⁵ *Iowa River: Iowa and Minnesota*, House Document No. 134, 71st Congress, 2nd Session, pp. 3, 9-11. See also the markings on the map opposite page 9. This is a report with maps and charts submitted on December 13, 1929, by the Chief of Engineers, United States Army, to the Secretary of War, presenting a plan for the improvement of the Iowa River for navigation, flood control, power development, and irrigation. It includes the Cedar River, the main tributary of the Iowa.

¹⁸⁶ *Iowa River: Iowa and Minnesota*, House Document No. 134, 71st Congress, 2nd Session, pp. 3-10, 15, 16, 19-27, 69, 70. For exact data about these various streams see the Water Resources Division, Iowa State Planning Board, *Stream Flow Records of Iowa, 1873-1932*.

¹⁸⁷ Samuel Calvin, "Geology of Mitchell County" in the *Iowa Geological Survey*, Vol. 13, pp. 296-306; W J McGee, *The Pleistocene History of Northeastern Iowa*, pp. 358-366, 393-396; *Iowa River: Iowa and Minnesota*, House Document No. 134, 71st Congress, 2nd Session, pp. 9-12. The statistics on mileage, dams, and bridges, unless otherwise noted, are taken from this report. For the most recent and accurate accounts of the Pleistocene period in Iowa see G. F. Kay, "Classification and Duration of the Pleistocene Period" in the *Bulletin of the Geological Society of America*, Vol. 42, pp. 425-466, and "Pleistocene History and Early Man in America" in the *Bulletin of the Geological Society of America*, Vol. 50, pp. 453-464.

¹⁸⁸ *Iowa: A Guide to the Hawkeye State*, pp. 372-374. The course of the Cedar is followed from Otranto to Vinton by U. S. Highway 218, described on pages 372-378. See also *Iowa River: Iowa and Minnesota*, House Document No. 134, 71st Congress, 2nd Session, p. 70; *Weekly Times* (Dubuque), February 10, 1859.

¹⁸⁹ H. C. Brown, "Bradford—A Prairie Village" and C. G. Laird, "The Little Brown Church" in *The Palimpsest*, Vol. 2, pp. 67-71, 73-79; *Weekly Times* (Dubuque), February 10, 1859.

Notes and References

¹⁹⁰ Mrs. Aldrich, who attended Iowa State Teachers College, has also written a novel entitled *Miss Bishop*, with the college and town as its locale. In 1940 a movie based on this novel was filmed under the title "Cheers for Miss Bishop".

¹⁹¹ The 1940 census figures are from a report issued by the Bureau of the Census on December 26, 1940. Earlier figures are from the *Fifteenth Census of the United States*. See also Iowa: *A Guide to the Hawkeye State*, pp. 313-319.

¹⁹² N. H. Parker, *The Iowa Handbook, for 1856*, pp. 91-93.

¹⁹³ *Iowa: A Guide to the Hawkeye State*, pp. 187-197.

¹⁹⁴ *Iowa's State Parks and Preserves* (1937), pp. 15, 16. Palisades-Kepler is the only State Park on the Cedar River.

¹⁹⁵ For an account of Ivanhoe and the Old Military Road see the articles by J. C. Parish, M. L. Hansen, and J. E. Briggs in *The Palimpsest*, Vol. 2, pp. 33-59. See also L. A. Brewer and B. L. Wick, *History of Linn County, Iowa*, Vol. 1, p. 43.

¹⁹⁶ *The History of Muscatine County, Iowa* (1879), p. 506. On January 12, 1839, Governor Robert Lucas approved an act to incorporate "The Bloomington and Cedar River Canal Company" with full power to "construct, maintain and continue a navigable canal or slackwater navigation from the town of Bloomington to Cedar River, as near as practicable to the mouth of Rock Creek". Among the eleven incorporators were such prominent Iowans as Joseph Williams and Suel Foster. The plan of this company was to encourage trade and furnish power for factories. When a survey showed that the divide between the Mississippi and Cedar rivers was eighty-four feet high the scheme collapsed. It was revived in 1865 as a water-power project but again failed to materialize. The Bloomington and Cedar River Canal was the only project of its kind in Iowa designed to unite the Mississippi with one of its tributaries by means of a canal. — *Laws of Iowa, 1838-1839*, pp. 231-239.

¹⁹⁷ W. H. Schoewe, "The Origin and History of Extinct Lake Calvin" in the *Iowa Geological Survey*, Vol. 29, pp. 55-60; *The Des Moines Register*, February 5, August 15, 1940.

¹⁹⁸ Z. M. Pike, *An Account of Expeditions to the Sources of the Mississippi*, Appendix to Part 1, p. 43; A. M. Lea, *Notes on Wisconsin Territory, with a Map*, pp. 28, 29.

¹⁹⁹ C. R. Aurner, *A Topical History of Cedar County, Iowa*, Vol. 1, p. 267.

²⁰⁰ The *Ripple* was also the first steamboat to navigate the Iowa River as far as Iowa City. — See J. C. Parish, "The Ripple" in *The Palimpsest*, Vol. 2, pp. 113-122.

²⁰¹ L. A. Brewer and B. L. Wick, *History of Linn County, Iowa*, Vol. 1, p. 425. Brewer and Wick describe the *Uncle Toby* as a 200-ton craft whereas she was only half that size according to official government records.

²⁰² L. A. Brewer and B. L. Wick, *History of Linn County, Iowa*, Vol. 1, pp.

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428-430; J. C. Hartman, *History of Black Hawk County, Iowa*, Vol. 1, pp. 378, 379; R. C. Grahame, "Voyages of the Black Hawk" in *The Palimpsest*, Vol. 9, pp. 157-169.

²⁰⁸ L. A. Brewer and B. L. Wick, *History of Linn County, Iowa*, Vol. 1, pp. 426-428; G. B. Merrick, "Steamboats and Steamboatmen of the Upper Mississippi" in the *Burlington Post*, February 28, 1914; *Des Moines Valley Whig* (Keokuk), May 9, 1859.

²⁰⁴ L. A. Brewer and B. L. Wick, *History of Linn County, Iowa*, Vol. 1, pp. 428-434; Arthur Springer, *History of Louisa County*, Vol. 1, pp. 209-215, 352, 353, 389, 390; *United States Statutes at Large*, Vol. 16, Ch. 92, p. 121, May 6, 1870, Vol. 28, Ch. 299, p. 356, August 18, 1894.

²⁰⁵ C. R. Aurner, *A Topical History of Cedar County*, Vol. 1, p. 267; *The History of Muscatine County* (1879), pp. 583, 584; L. A. Brewer and B. L. Wick, *History of Linn County, Iowa*, Vol. 1, pp. 420, 421.

²⁰⁶ J. C. Hartman, *History of Black Hawk County, Iowa*, Vol. 1, p. 372.

²⁰⁷ Arthur Springer, *History of Louisa County, Iowa*, Vol. 1, pp. 389, 390; *The History of Cedar County* (1901), Vol. 1, pp. 343-346.

²⁰⁸ *The History of Muscatine County* (1879), pp. 583, 584; *Iowa River: Iowa and Minnesota*, House Document No. 134, 71st Congress, 2nd Session, p. 33.

²⁰⁹ L. A. Brewer and B. L. Wick, *History of Linn County, Iowa*, Vol. 1, pp. 420-423. A good account of the difficulties of pioneer bridge construction may be found in B. E. Mahan, "Bridging the Cedar" in *The Palimpsest*, Vol. 4, pp. 307-320.

²¹⁰ *Iowa River: Iowa and Minnesota*, House Document No. 134, 71st Congress, 2nd Session, pp. 31-34.

²¹¹ *The History of Muscatine County* (1879), pp. 583, 584; *Iowa River: Iowa and Minnesota*, House Document No. 134, 71st Congress, 2nd Session, pp. 56-64.

²¹² J. C. Hartman, *History of Black Hawk County, Iowa*, Vol. 1, p. 375; *The History of Muscatine County* (1879), pp. 338-346; J. E. Briggs, "The Flood of 1851" in *The Palimpsest*, Vol. 15, pp. 207-215. The United States Engineers Office at Rock Island has been gradually assembling data on floods on the various Iowa streams from the Turkey River to the Des Moines River. The writer was given access to much of this statistical data.

²¹³ Vinton Eagle, July 24, August 7, 1858; *Muscatine Journal*, June 9, July 23, 26, 1858; J. C. Hartman, *History of Black Hawk County, Iowa*, Vol. 1, pp. 375-376.

²¹⁴ An excellent record of floods in the Iowa-Cedar valleys may be found in *Iowa River: Iowa and Minnesota*, House Document No. 134, 71st Congress, 2nd Session, pp. 36-56.

²¹⁵ *Cedar Rapids Republican*, March 27, 1917; *Iowa Weather and Crop Service*, Vol. 28, p. 31, Vol. 40, p. 17.

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- ²¹⁶ *Iowa Weather and Crop Bureau*, Vol. 44, p. 25.
- ²¹⁷ The increase in population for Cedar Rapids, Waterloo, and Mason City is from a report of the United States Census Bureau issued on December 26, 1940. *The Des Moines Register*, April 3, October 11, 1940.
- ²¹⁸ W. J. Petersen, "The Ioways Bid Farewell" in *The Palimpsest*, Vol. 19, pp. 397-400; F. R. Aumann, "The Ioway" in *The Palimpsest*, Vol. 9, pp. 38-41.
- ²¹⁹ A. R. Fulton, *The Red Men of Iowa*, pp. 107-125, 423-426; *Annals of Iowa* (First Series), Vol. 2, pp. 268, 269; F. W. Hodge, *Handbook of American Indians*, Part I, pp. 612-614. There are fully a hundred different spellings of the word Iowa: Aiaouez or Paoutez (William Delisle, 1718); Aiauway, Aieways, Ayaways, Ayouways, Ayoways (Lewis and Clark, 1804); Aiowais, Iowa, Ioway (Pike, 1805). See also the maps in C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plate 31-B.
- ²²⁰ A. M. Lea, *Notes on Wisconsin Territory, with a Map*, pp. 7, 8. J. N. Nicollet credited Lea with the honor of first affixing the name Iowa to the land north of Missouri. "But, in 1836, my friend Albert M. Lea, esq., then a lieutenant of dragoons, published a map and description of the country, which he called the 'Iowa district'—a name both euphonious and appropriate, being derived from the Iowa river, the extent, beauty, and importance of which were then first made known to the public."—J. N. Nicollet, *Report of the Upper Mississippi River*, p. 73.
- ²²¹ B. F. Shambaugh, "The Naming of Iowa" in *The Palimpsest*, Vol. 5, pp. 370-372, Vol. 16, pp. 81-86.
- ²²² F. L. Mott, "Pronunciation of Iowa" in *The Palimpsest*, Vol. 5, pp. 373-377.
- ²²³ *Jesuit Relations*, Vol. 59, pp. 113-125; L. G. Weld, "Joliet and Marquette in Iowa" in *The Iowa Journal of History and Politics*, Vol. 1, pp. 3-16.
- ²²⁴ C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plates 22-A, 23-A, 23-B, 24, 28, 29, 31-B, 32-A. See map in Jonathan Carver's *Travels in the Interior Portions of North America* (1778). Although Captain Philip Pittman refers to the St. Pierre (Minnesota) River, the St. Croix, the Moingona, and the Illinois, he does not mention the Iowa-Cedar rivers in *The Present State of the European Settlements on the Mississippi*, pp. 29, 30. This book was published in London in 1770, and was reprinted with notes by F. H. Hodder in 1906 by The Arthur H. Clark Company. See also Z. M. Pike, *An Account of Expeditions to the Sources of the Mississippi*, p. 8, Appendix to Part 1, p. 43.
- ²²⁵ J. C. Beltrami, *A Pilgrimage in Europe and America*, Vol. 2, pp. 136-152.
- ²²⁶ A. M. Lea, *Notes on Wisconsin Territory, with a Map*, pp. 28, 29, map. Lea's "Memoir" which accompanied the map may be found in *The Palimpsest*, Vol. 16, pp. 109-134.
- ²²⁷ Louis Pelzer, "A Journal of Marches by the First United States Dragoons

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1834-1835" in *The Iowa Journal of History and Politics*, Vol. 7, p. 368. Perhaps one of the most thrilling buffalo hunts in Iowa was made by Chief Keokuk on the Iowa River in 1833. — W. J. Petersen, "Buffalo Hunting with Keokuk" in *The Palimpsest*, Vol. 16, pp. 33-49.

²²⁸ *Iowa River: Iowa and Minnesota*, House Document No. 134, 71st Congress, 2nd Session, pp. 3-12, 99-101; T. H. Macbride, "Geology of Kossuth, Hancock, and Winnebago Counties" in the *Iowa Geological Survey*, Vol. 13, pp. 96-98. An excellent map showing the headwaters and drainage may be consulted opposite p. 116.

²²⁹ W. J. Petersen, "The Terms of Peace" in *The Palimpsest*, Vol. 13, pp. 74-89; A. M. Lea, *Notes on Wisconsin Territory, with a Map*. See the map.

²³⁰ J. B. Newhall, *Sketches of Iowa*, pp. 95-98; *Iowa News* (Dubuque), January 13, 1838.

²³¹ *Iowa News* (Dubuque), January 13, 1838.

²³² *Iowa News* (Dubuque), May 19, 1838; J. L. Scott, *A Journal of a Missionary Tour*, pp. 144, 145.

²³³ A. M. Lea, *Notes on Wisconsin Territory, with a Map*, p. 29. On his map Lea erroneously placed Poweshiek's village on the Cedar River outside the Keokuk Reserve. The rapids Lea mentioned were probably Buttermilk Falls, in the Johnson County panhandle just above the Louisa County line. The distance is actually just under fifty miles and not the "100 miles" mentioned by Lea. Iowa City itself is only sixty-six miles from the mouth of the Iowa River.

²³⁴ *The Iowa City Standard*, June 24, 1841. The toast of Jesse Williams was particularly appropriate: "Iowa, bounded on the east by the 'Father of Rivers' and interspersed by interior natural channels of navigation. Her future prospects are unsurpassed by any portion of the great west."

²³⁵ B. F. Shambaugh, *The Old Stone Capitol Remembers*, pp. 182-191; J. C. Parish, "The Ripple" in *The Palimpsest*, Vol. 2, pp. 113-122. These two accounts illustrate graphically the intense longing for steamboat transportation on the part of settlers located on interior streams.

²³⁶ *The Iowa City Standard*, April 23, 30, 1842.

²³⁷ *Iowa Capitol Reporter* (Iowa City), March 16, 1844. The interest of the outside world in such exploits is attested by the fact that the arrival of the *Agatha* was chronicled in the *Northwestern Gazette and Galena Advertiser* on March 26, 1844.

²³⁸ *Iowa Capitol Reporter* (Iowa City), June 8, July 13, September 14, 1844. The *Maid of Iowa* was owned by Joseph Smith and the Mormon Church at Nauvoo and has the distinction of being the first steamboat built in Iowa. She was a trail blazer on many streams and her exploits were widely heralded. See *Enrolment of Vessels*, Collector of Customs Office, St. Louis, Enrolment 49, May 2, 1844.

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²³⁹ *Iowa Capitol Reporter*, June 29, 1844. The gross exaggeration of the *Emma's* tonnage was characteristic of editors on interior waterways, the purpose no doubt being to encourage boats to visit remote points. Actually the *Emma* was a small craft built at Pittsburgh in 1842. She was 127 feet long, 18 feet in breadth, 3 feet in depth, and measured only 66 tons. — See *Enrolment of Vessels*, Collector of Customs Office, Pittsburgh, Vol. 6, Enrolment 75, August 13, 1842.

²⁴⁰ *Iowa City Capitol Reporter*, March, 18, 1846; H. W. Lathrop, "Early Steamboating on the Iowa River" in the *Iowa Historical Record*, Vol. 13, pp. 44-46; B. F. Shambaugh, *The Old Stone Capitol Remembers*, pp. 192-198.

²⁴¹ Arthur Springer, *History of Louisa County, Iowa*, Vol. 1, pp. 352, 353. The subject of ferries occupied much space in the Territorial laws. Thus, in addition to approving a number of special acts by which ferry privileges were conferred upon individuals, a general law regulating ferries on the waters of the Territory was approved by Governor Robert Lucas on December 20, 1838. This bill provided that no person could "keep a ferry across any stream except the Mississippi . . . without having first obtained a license, from the county commissioners' court of the proper county". — *Laws of Iowa*, 1838-1839, pp. 208-210.

²⁴² Jacob Van der Zee, "Roads and Highways of Territorial Iowa" in *The Iowa Journal of History and Politics*, Vol. 3, 181-191; B. F. Shambaugh, *The Old Stone Capitol Remembers*, pp. 199-208. For the story of ferries across the Iowa River at points farther upstream, consult the various county histories. See Ruth A. Gallaher, "One More River to Cross" in *The Palimpsest*, Vol. 8, pp. 102-118.

²⁴³ S. E. Graves, "The Coming of the Railroad" in *The Palimpsest*, Vol. 2, pp. 240-243; *The History of Marshall County, Iowa* (1878), p. 417; *History of Hardin County, Iowa* (1883), pp. 505-507.

²⁴⁴ *Journal of the Iowa Senate*, 1868, pp. 226, 227, 305, 400, 434, 450, 452; Arthur Springer, *History of Louisa County, Iowa*, Vol. 1, pp. 212, 389, 390; B. F. Shambaugh, *The Old Stone Capitol Remembers*, pp. 206-207. The River and Harbor Act of August 18, 1894, declared: "So much of the Iowa River within the State of Iowa as lies between the town of Toolsboro and the town of Wapello, in the county of Louisa, shall not be deemed a navigable river or public highway, but dams and bridges may be constructed across it." — See *United States Statutes at Large*, Vol. 28, Ch. 299, p. 356, August 18, 1894. And in 1930 the United States Army Engineers declared the Iowa River "is legally unnavigable except for 3 miles at its mouth".

²⁴⁵ *Iowa River: Iowa and Minnesota*, House Document No. 134, 71st Congress, 2nd Session, pp. 31, 32.

²⁴⁶ *Water Use and Conservation in Iowa*, Vol. 1, pp. 31-36; *Iowa River: Iowa and Minnesota*, House Document No. 134, 71st Congress, 2nd Session, pp. 9-18, 35-56. These two sources give complete and accurate information on rainfall, stream flow, floods, silt, and sedimentation.

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²⁴⁷ *Iowa River: Iowa and Minnesota*, House Document No. 134, 71st Congress, 2nd Session, pp. 4-6, 86, 151, 152.

²⁴⁸ J. E. Briggs, "The Council on the Iowa" in *The Palimpsest*, Vol. 9, pp. 133-148.

²⁴⁹ B. F. Shambaugh, *The Old Stone Capitol Remembers*.

²⁵⁰ Bertha M. H. Shambaugh, *Amana That Was and Amana That Is*; Ruth A. Gallaher, "The Tama Indians" in *The Palimpsest*, Vol. 7, pp. 44-53; J. A. Swisher, "Adrian C. Anson" in *The Palimpsest*, Vol. 3, pp. 374-378; *History of Hardin County, Iowa* (1883), pp. 970, 971; *Iowa: A Guide to the Hawkeye State*, pp. 473-475, 487, 488.

²⁵¹ Jocelyn Wallace, "An Iowa Doone Band" in *The Palimpsest*, Vol. 4, pp. 267-280; *History of Hardin County, Iowa* (1883), pp. 979, 980. For an account of this episode, see Herbert Quick's *The Hawkeye*. Many of the scenes and episodes of Quick's *The Hawkeye*, *Vandemark's Folly*, and *The Invisible Woman* take place in Hardin County.

²⁵² *History of Hardin County, Iowa* (1883), pp. 291-292; B. E. Mahan, "Mottoes and Slogans of Iowa" in *The Palimpsest*, Vol. 5, pp. 384-386.

²⁵³ J. B. Newhall, *A Glimpse of Iowa in 1846*, pp. v, vi.

²⁵⁴ For an account of the founding of Pella see Jacob Van der Zee, *The Hollanders of Iowa*, pp. 57-82.

²⁵⁵ N. H. Parker, *Iowa As It Is In 1857*, pp. 160, 161.

²⁵⁶ *Skunk River, Iowa*, House Document No. 170, 72nd Congress, 1st Session, p. 11. The population of the Skunk River Valley increased from 89,500 in 1860 to 183,000 in 1900. A slight decline occurred between 1900 and 1925.

²⁵⁷ A. R. Fulton, *The Red Men of Iowa*, pp. 433, 434. Fulton contended for the onion theory and is supported by Frank Labiseur, who served as United States Interpreter among the Sauk and Fox Indians. According to Labiseur "The Indian name was Chicaque, which, in their language, is anything of a strong or obnoxious odor — such as onion, skunk, etc. From the fact that the headwaters of the stream abound in wild onions, the interpretation should have been 'Onion.'" The presence of onions at the headwaters is scarcely a valid explanation since the river had received its name a generation before the Sauk and Fox arrived in the region around 1830. — See N. C. Roberts and S. W. Moorhead, *Story of Lee County, Iowa*, Vol. 1, p. 3.

²⁵⁸ This would be somewhat akin to the manner in which Chicago was named. F. W. Hodge declared that the word Chicago is derived from the Sauk, Fox, and Kickapoo language — the word *shekagua* being translated as the "place of the skunk". This ancient name for the southern tip of Lake Michigan is said to have originated from the fact that a large skunk once lived in the vicinity. It was killed by a

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party of hunters. — F. W. Hodge, *Handbook of American Indians*, Vol. 1, pp. 258, 259.

²⁵⁹ C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plates 29, 32-A; J. C. Beltrami, *A Pilgrimage in Europe and America*, Vol. 2, p. 151.

²⁶⁰ A. M. Lea, *Notes on Wisconsin Territory, with a Map*; Isaac Galland, *Galland's Iowa Emigrant*, p. 13.

²⁶¹ A. M. Lea, *Notes on Wisconsin Territory, with a Map*, p. 27.

²⁶² *The Iowa City Standard*, August 6, 1842.

²⁶³ Enrolment 49, May 2, 1844, in *Enrolment of Vessels*, Collector of Customs Office, St. Louis.

²⁶⁴ *Iowa Capitol Reporter* (Iowa City), June 8, July 13, September 14, 1844; L. A. Brewer and B. L. Wick, *History of Linn County, Iowa*, Vol. 1, p. 425; *Bloomington* (Muscatine) *Herald*, August 2, 1844; *Northwestern Gazette and Galena Advertiser*, July 3, 1845; *Burlington Post*, April 14, 1917; Tacitus Hussey, "History of Steamboating on the Des Moines River, from 1837 to 1862" in the *Annals of Iowa* (Third Series), Vol. 4, pp. 346, 347.

²⁶⁵ The Western Stage Company and similar organizations were well known. Many Forty-Niners stopped at such towns as Pella on their way to California, leaving their tribute in the form of purchases.

²⁶⁶ *Skunk River, Iowa*, House Document No. 170, 72nd Congress, 1st Session, pp. 8, 9.

²⁶⁷ T. H. Macbride, "Geology of Hamilton and Wright Counties" in the *Iowa Geological Survey*, Vol. 20, p. 118. An excellent map of Hamilton County opposite page 126 shows a small tributary of the Skunk rising near Kamrar and flowing through Cairo and Wall Lake.

²⁶⁸ *Skunk River, Iowa*, House Document No. 170, 72nd Congress, 1st Session, pp. 8, 9, 62-65, and maps.

²⁶⁹ J. B. Weaver, *Past and Present of Jasper County, Iowa*, Vol. 1, p. 28; W. O. Payne, *History of Story County, Iowa*, Vol. 1, p. 25.

²⁷⁰ C. R. Aurner, *History of Education in Iowa*, Vol. 3, pp. 3-168, Vol. 4, pp. 193-311; C. R. Aurner, "Many Foundations" in *The Palimpsest*, Vol. 11, pp. 417-431; B. H. Wilson, "Iowa Wesleyan College" in *The Palimpsest*, Vol. 11, pp. 432-445; C. E. Payne, *Josiah Bushnell Grinnell*, pp. 26-32.

²⁷¹ E. D. Ross, "The Iowa State Fair" in *The Palimpsest*, Vol. 10, pp. 269-313.

²⁷² D. E. Clark, *Samuel Jordan Kirkwood*, pp. 262-278.

²⁷³ B. H. Wilson, "Iowa Wesleyan College" in *The Palimpsest*, Vol. 11, pp. 432-445.

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274 J. A. Swisher, "Billy Sunday" in *The Palimpsest*, Vol. 11, 343-354; *Iowa: A Guide to the Hawkeye State*, p. 492.

275 *Musical Iowana 1838-1938*, pp. 87-157; *Iowa: A Guide to the Hawkeye State*, pp. 514-519.

276 *The Book of Iowa* (1932), pp. 20-62; *Midland Schools*, Vol. 44, pp. 8, 9, 48, 49, 115, 117, 149-151, 179-181, 211-213, 245-247, 305-307, 349-351; *Iowa: A Guide to the Hawkeye State*, pp. 172, 489, 514, 515, 525.

277 *Skunk River, Iowa*, House Document No. 170, 72nd Congress, 1st Session, pp. 10, 11, 33-40, 55.

278 This torrential downpour is invariably associated with the Devils Creek flood, a hydrological phenomenon that is mentioned by the United States Army Engineers in each report they have made on the various rivers of Iowa.

279 A. F. Meyer, *The Elements of Hydrology*, p. 134.

280 *Iowa Weather and Crop Service*, Vol. 16, June, 1905, pp. 3-10.

281 *The Flood of June 10, 1905, on Devils Creek, Iowa*. This is a 40-page typewritten discussion of the original report by E. C. Murphy and F. W. Hanna entitled "Flood on Devils Creek, Iowa" which was published in the *United States Geological Survey Water-Supply Paper* 162, pp. 24-31. It was prepared by Assistant Engineer Wayne I. Travis and others under the general direction of District Engineer R. G. Kasel. The booklet is profusely illustrated with charts and pictures.

282 A. T. Andreas, *Illustrated Historical Atlas of the State of Iowa* (1875), pp. 249, 399, 400; C. R. Keyes, "Geology of Lee County" in the *Iowa Geological Survey*, Vol. 3, pp. 315-318, and map; *Fifteenth Census of the United States, 1930*, Vol. 1, Population, p. 377.

283 *Fort Madison Democrat*, June 10, 12, 13, 1905; *Constitution-Democrat* (Keokuk), June 10, 12, 13, 1905; E. C. Murphy and F. W. Hanna, "Flood on Devils Creek, Iowa" in *Water-Supply and Irrigation Paper* No. 162, p. 29.

284 *The Flood of June 10, 1905, on Devils Creek, Iowa*, pp. 1-28; A. F. Meyer, *The Elements of Hydrology* (1928), pp. 134, 373; Water Resources Committee, National Resources Committee, *Low Dams* (1938), p. 405; G. R. Williams and L. C. Crawford, "Maximum Discharges at Stream-Measurement Stations Through December 31, 1937" in *United States Geological Survey Water-Supply Paper* 847, pp. 89, 90.

285 A. M. Lea, *Notes on Wisconsin Territory, with a Map*, p. 26.

286 J. H. Colton, *Guide for the Territory of Iowa* (1839) and *Township Map of the State of Iowa* (1854); A. T. Andreas, *Illustrated Historical Atlas of the State of Iowa* (1875), p. 249; C. R. Keyes, "Geology of Lee County" in the *Iowa Geological Survey*, Vol. 3, pp. 315-318 and map; *Soil Survey of Iowa, Report No. 5 — Lee County*. See map.

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- ²⁸⁷ *Jesuit Relations*, Vol. 59, pp. 109-137. See maps opposite pages 86, 108, 154.
- ²⁸⁸ Baron de Lahontan, *New Voyages to North America*, edited by R. G. Thwaites, Vol. 1, pp. 167-200, and maps opposite pages 156 and 284.
- ²⁸⁹ Louis Hennepin, *A New Discovery of a Vast Country in America*, edited by R. G. Thwaites, Vol. 1, p. 221 and map opposite page 22.
- ²⁹⁰ Louise P. Kellogg, *The French Régime in Wisconsin and the Northwest*. See Franquelin's map opposite page 1.
- ²⁹¹ C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plates 23-A, 23-B, 23-C, 24, 27; Justin Winsor, *The Mississippi Basin*, pp. 107, 113, 205, 262, 321; Jonathan Carver, *Travels Through the Interior Parts of North-America*, see map opposite title page.
- ²⁹² C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plates 28, 31-B, 32-A.
- ²⁹³ The confusion between these two theories is seen in the following explanation by the Dubuque *Iowa News* of June 10, 1837. "The Des Moines. — This is the true name of the river. *Moins* is an abbreviation of the word *Moingonas* a nation of Indians who inhabited the country bordering on that river and gave it its name. The ancient settlers of this country called the stream *La Riviere des Moines* instead of *des Moingonas* which was too long. The '*Riviere Des Moines*,' as it is usually called, means the river of the *Monks*." — See J. N. Nicollet, *Report of the Upper Mississippi River*, pp. 22-24.
- ²⁹⁴ C. R. Keyes, "Origin of the Name Des Moines" in the *Annals of Iowa* (Third Series), Vol. 3, pp. 554-559; L. F. Andrews, "The Word 'Iowa' — What it Means" in the *Annals of Iowa* (Third Series), Vol. 2, pp. 465-469; B. F. Gue, *History of Iowa*, Vol. 1, pp. 33, 34; Johnson Brigham, *History of Des Moines and Polk County*, Vol. 1, pp. 3, 4.
- ²⁹⁵ A. M. Lea, *Notes on Wisconsin Territory, with a Map*, pp. 24, 25.
- ²⁹⁶ *Eighteenth Annual Report of the Bureau of American Ethnology*, Plates CXXXI and CXXXII. See also the abstract of treaties in same volume, pages 706-784.
- ²⁹⁷ Jacob Van der Zee, "Forts in the Iowa Country" in *The Iowa Journal of History and Politics*, Vol. 12, pp. 163-204. For additional readings on these military posts see W. J. Petersen, *Two Hundred Topics in Iowa History*, pp. 22, 23.
- ²⁹⁸ Accounts of the settlement of these and other towns may be found by consulting the various histories of the counties in which they are located. See also Jacob Van der Zee, "Episodes in the Early History of the Des Moines Valley" in *The Iowa Journal of History and Politics*, Vol. 14, pp. 311-347.
- ²⁹⁹ The most complete account of steamboating on the Des Moines River was written by Tacitus Hussey. See his "History of Steamboating on the Des Moines

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River, from 1837 to 1862" in the *Annals of Iowa* (Third Series), Vol. 4, pp. 323-382.

⁸⁰⁰ *St. Louis Commercial Bulletin*, quoted in the *Iowa News* (Dubuque), June 3, 1837. George B. Merrick does not include the *Hero* among his 2200 steam craft that plied the waters of the upper Mississippi. The author found the boat enrolled in the Collector of Customs Office, Pittsburgh, Pennsylvania. — See Enrolment 33, July 17, 1834.

⁸⁰¹ Tacitus Hussey, "History of Steamboating on the Des Moines River, from 1837 to 1862" in the *Annals of Iowa* (Third Series), Vol. 4, pp. 332-335; Johnson Brigham, *History of Des Moines and Polk County*, Vol. 1, pp. 19-24. The trip of the *Agatha* was recalled by W. C. Morris, a member of the crew, fifty-six years after the voyage occurred.

Captain Allen suggested that the new post be named "Fort Raccoon". Adjutant General Jones forwarded the report to the Secretary of War with the endorsement: "Fort Iowa would be a very good name: but *Raccoon* would be shocking; at least in very bad taste." Major General Winfield Scott also thought Raccoon was an improper designation for a military post and called it "Fort Des Moines".

⁸⁰² Quoted in *Niles' National Register*, Vol. 64, p. 224.

⁸⁰³ Tacitus Hussey, "History of Steamboating on the Des Moines River, from 1837 to 1862" in the *Annals of Iowa* (Third Series), Vol. 4, pp. 329-331; *Burlington Post*, April 17, 1915, August 12, 1916, June 8, September 21, 1918. The recorded tonnages for some of these boats are: *Science*, 50; *Maid of Iowa*, 60; *Lighter*, 63; *Agatha*, 64; *Caleb Cope*, 79; *Pavilion*, 83; *Kentucky*, 90; *Revenue Cutter*, 100; *Time and Tide*, 161; and *Globe*, 211. All these boats were dwarfed by the 485-ton *Jeanie Deans*. The average tonnage for regular Des Moines River packets was well under 100 tons and the draft was generally less than two feet.

⁸⁰⁴ Hiram Heaton is the authority for the story of the *Skipper*, one of the best known crafts on the Des Moines. — *Burlington Post*, July 15, 1915, September 21, 1918.

⁸⁰⁵ *Fort Dodge Sentinel*, April 7, 1859. The interest in the voyage of the *Charles Rodgers* was not confined to Fort Dodge and to Des Moines River ports. The *Weekly Ottumwa Courier* of June 23, 1859, declared: "She [the *Charles Rodgers*] is of light draft, carries 50 tons with ease; has made 5 trips from Des Moines to Ft. Dodge and 13 trips from Keokuk to Des Moines this season. She has carried 400 tons to Des Moines and 150 tons to Ft. Dodge at an average of 60 cts. per hundred pounds. The Capt. informed us that his receipts this season were equal to his expectations. The cost of the Rogers was \$3,000. She has brought some 300 tons to our levee, and taken 359 from the same."

⁸⁰⁶ The voyage of the *Charles Rodgers* inspired the following comment in the *Independence Civilian*: "We learn from the *Fort Dodge Sentinel* that the experiment of navigating the Des Moines as far as Fort Dodge, has proved successful. The

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steamboat Chas. Rogers is now running from that place, though our wise Legislature of last winter enacted that it was not navigable above the capitol. The people of Fort Dodge seem jubilant over the success and we rejoice with them. The Cedar river has already been proved navigable for steamboats to Waterloo, and even the little Maquoketa has been seriously threatened with navigation." — Quoted in the *Fort Dodge Sentinel*, April 30, 1859.

³⁰⁷ This small town in Washington Township, Webster County, was located about two miles east of the Des Moines River. — See A. T. Andreas, *Illustrated Historical Atlas of Iowa* (1875), p. 111. A post office was established at Border Plains on September 19, 1854, with Sherman Hart as the first postmaster. The office was discontinued on August 15, 1905. See Card 713 in the Mereness list of Iowa post offices in the library of the State Historical Society of Iowa.

³⁰⁸ *Fort Dodge Sentinel*, April 30, May 7, May 28, 1859. On June 11th the editor declared: "The spectacle of two Steamers in our midst will be as pleasing, almost, as the first visit of the Rogers." A month later, on July 16th, he exclaimed: "Hurry up the Railroads, and Iowa is all right."

³⁰⁹ *Annals of Iowa* (Third Series), Vol. 3, p. 600.

³¹⁰ C. H. Gatch, "The Des Moines River Land Grant" in the *Annals of Iowa* (Third Series), Vol. 1, pp. 354-370, 466-492, 536-552, 629-641; *Annals of Iowa* (Third Series), Vol. 10, pp. 67-70; Ruth A. Gallaher, "Samuel Ryan Curtis" in *The Iowa Journal of History and Politics*, Vol. 25, pp. 331-358; J. A. Swisher, "The Des Moines River Improvement Project" in *The Iowa Journal of History and Politics*, Vol. 35, pp. 142-180.

³¹¹ *Des Moines River, Iowa*, House Document No. 682, 71st Congress, 3rd Session, pp. 1-11.

³¹² Committee on Water Resources, Iowa State Planning Board, *Water Use and Conservation*, Vol. 2, pp. 1-25; *Des Moines River, Iowa*, House Document No. 682, 71st Congress, 3rd Session, pp. 9-14 and map opposite page 9.

³¹³ *Des Moines River, Iowa*, House Document No. 682, 71st Congress, 3rd Session, pp. 15, 16, 31-47.

³¹⁴ Tacitus Hussey, "The Flood of 1851" in the *Annals of Iowa* (Third Series), Vol. 5, pp. 401-424; J. E. Briggs, "The Flood of 1851" in *The Palimpsest*, Vol. 15, pp. 207-215.

³¹⁵ Hydraulic Section, United States Engineers Office, Rock Island, File 7.06; *Iowa Weather and Crop Service*, Vol. 14, June, 1903, pp. 5, 10, 11, Vol. 44, pp. 25-31; *Des Moines River, Iowa*, House Document No. 682, 71st Congress, 3rd Session, pp. 31-47, 79-80. See pages 125, 126 for brief abstracts of the Keosauqua floods of 1903, 1905, 1917; the Kalo floods of 1915, 1917, and 1920; the Van Meter floods of 1915, 1917, and 1926.

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³¹⁶ *Iowa's State Parks and Preserves* (1937); J. A. Swisher, "Iowa State Parks" in *The Palimpsest*, Vol. 12, pp. 201-253; T. P. Christensen, "The State Parks of Iowa" in *The Iowa Journal of History and Politics*, Vol. 26, pp. 331-414.

³¹⁷ Pierre Charlevoix, *Journal of a Voyage to North-America*, Vol. 2, pp. 225, 226.

³¹⁸ J. E. Briggs, "When Iowa Was Young" in *The Palimpsest*, Vol. 6, pp. 117-127.

³¹⁹ Jacob Van der Zee, "Episodes in the Early History of the Des Moines Valley" in *The Iowa Journal of History and Politics*, Vol. 14, pp. 321-347.

³²⁰ Jacob Van der Zee, "The Opening of the Des Moines Valley to Settlement" in *The Iowa Journal of History and Politics*, Vol. 14, pp. 479-558.

³²¹ J. A. Swisher, "Kate Shelley" in *The Palimpsest*, Vol. 6, pp. 45-55.

³²² *Iowa: A Guide to the Hawkeye State*, pp. 112, 412, 437, 446, 480, 509.

³²³ C. B. Kreiner, "The Ottumwa Coal Palace" in *The Palimpsest*, Vol. 3, pp. 336-342; Ruth A. Gallaher, "The Cardiff Giant" in *The Palimpsest*, Vol. 2, pp. 269-281; *Iowa: A Guide to the Hawkeye State*, pp. 400, 402, 404, 405.

³²⁴ B. F. Shambaugh, *The Constitutions of Iowa*, pp. 153-212.

³²⁵ *Weekly Times* (Dubuque), January 6, 1859.

³²⁶ *Jesuit Relations*, Vol. 59, pp. 139-143.

³²⁷ I. J. Cox, *The Journeys of Rene Robert Cavalier La Salle*, Vol. 1, pp. 133-134; P. E. Chappell, "A History of the Missouri River" in the *Transactions of the Kansas State Historical Society*, Vol. 9, pp. 240-246. This article contains a good summary of the history of the Missouri River. See also the *Nebraska History Magazine*, Vol. 8, pp. 5-11.

³²⁸ *Jesuit Relations*, Vol. 66, p. 225.

³²⁹ C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plates 22-A, 23-A, 23-C, 24, 27; Laurie & Whittle, *A New Map of North America . . . Divided according to the Preliminary Articles of Peace, Signed at Versailles, 20, Jan. 1783*; published by Laurie & Whittle, London, May 12, 1794. The writer is under obligation to Professor Ernest Horn of the College of Education at the State University of Iowa for the use of this map.

³³⁰ Victor Collot, *A Journey in North America*, Vol. 1, pp. 271-274.

³³¹ R. G. Thwaites, *Original Journals of the Lewis and Clark Expedition 1804-1806*, Vol. 1, pp. 3-115. A good outline of the expedition is found on pages xxiv, xxxiii.

³³² R. G. Thwaites, *Original Journals of the Lewis and Clark Expedition 1804-1806*, Vol. 6, pp. 56-64; *Missouri River*, House Document No. 238, 73rd Congress, 2nd Session, pp. 378-381. The following distances above the Big Sioux illustrate the

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difference between Captain Clark's estimates of the mileage above the mouth of the Missouri River and measurements of United States Army Engineers.

To the Mouth of the:	Clark's Estimate	Modern Measurements
James	950	843.5
Niobrara	1000	894.2
White	1130	1008.8
Cheyenne	1310	1172.7
Cannonball	1500	1342.3
Little Missouri	1690	1515.7
Yellowstone	1880	1689.6
Milk	2090	1866.3
Mussellshell	2270	2003.6
Marias	2521	2189.9
Jefferson Fork	2848	2474.6

³⁸³ *Jefferson, Madison, and Gallatin Rivers, Mont.*, House Document No. 193, 72nd Congress, 1st Session, pp. 1-13.

³⁸⁴ T. P. Roberts, "The Upper Missouri River" in *Contributions to the Historical Society of Montana*, Vol. 1, pp. 234-267. This is an account of a reconnoissance in the Three Forks Basin made in 1872. In 1928 Lewis R. Freeman made a trip down the Missouri, choosing Livingston on the Yellowstone as his starting point. — See L. R. Freeman, "Trailing History Down the Big Muddy" in *The National Geographic Magazine*, Vol. 54, pp. 73-120. The following books on the Missouri are classics: J. G. Neihardt, *The River and I*; J. M. Hanson, *The Conquest of the Missouri*; and H. M. Chittenden, *History of Early Steamboat Navigation on the Missouri River*.

³⁸⁵ *Montana: A State Guide Book*, pp. 3-56, 148-171, 200-205, 218, 223-228, 324-326, 360-363. See also *Jefferson, Madison, and Gallatin Rivers, Mont.*, House Document No. 193, 72nd Congress, 1st Session, pp. 1-18; map 3 and chart 31; H. M. Chittenden, *History of Early Steamboat Navigation on the Missouri River*, Vol. 1, pp. 222-239.

³⁸⁶ *North Dakota: A Guide to the Northern Prairie State*, pp. 16-49; H. M. Chittenden, *The American Fur Trade of the Far West*, Vol. 3, pp. 947-974 and map.

³⁸⁷ A good brief account of Sioux City may be found in *Iowa: A Guide to the Hawkeye State*, pp. 299-312. The distances are taken from *Missouri River*, House Document No. 238, 73rd Congress, 2nd Session, pp. 378, 379.

³⁸⁸ H. M. Chittenden, *History of Early Steamboat Navigation on the Missouri River*, Vol. 1, pp. 90-114. The hardships of keelboat men are best described in J. G. Neihardt's *The Song of Three Friends*.

³⁸⁹ W. J. Petersen, *Steamboating on the Upper Mississippi*, pp. 81-89.

³⁴⁰ C. A. Murray, *Travels in North America*, Vol. 1, pp. 240-247.

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³⁴¹ *Iowa News* (Dubuque), June 3, 1837.

³⁴² *Columbia* (Missouri) *Patriot*, March 19, 1842, quoted in the *Missouri Historical Review*, Vol. 28, p. 168.

³⁴³ *History of Fremont County, Iowa* (1881), pp. 593, 594; *Nebraska Advertiser* (Nemaha), September 3, 1857.

³⁴⁴ C. P. Deatherage, *Early History of Greater Kansas City*, Vol. 1, pp. 424-426.

³⁴⁵ H. H. Field and J. R. Reed, *History of Pottawattamie County, Iowa*, Vol. 1, pp. 5-26; *History of the Counties of Woodbury and Plymouth, Iowa* (1890-1891), pp. 212, 213; *Iowa: A Guide to the Hawkeye State*, pp. 203-210, 299-312; E. D. Branch, "Railroads Came to Council Bluffs" in *The Palimpsest*, Vol. 10, pp. 201-229. The high cost of transportation between St. Louis and Sioux City was due to the high wages of pilots and crew together with the hazard of navigation which involved costly insurance. It ought also to be remembered that this was the first trip of its kind and the cost was not out of line with keelboat rates.

³⁴⁶ *Dubuque Herald*, June 9, 15, 1867. The paper quoted dispatches from Sioux City and St. Joseph.

³⁴⁷ *Sioux City Times*, June 1, 1872; "Steamboat Arrivals at Fort Benton, Montana, and Vicinity" in *Contributions of the Historical Society of Montana*, Vol. 1, pp. 324, 325.

³⁴⁸ H. M. Chittenden, *History of Early Steamboat Navigation on the Missouri River*, Vol. 1, pp. 216-221, Vol. 2, pp. 265-276, 425-437; Phil E. Chappell, "A History of the Missouri River" in the *Kansas Historical Collection*, Vol. 9, pp. 293, 294.

³⁴⁹ C. P. Deatherage, *Early History of Greater Kansas City*, Vol. 1, pp. 427-463; W. J. McDonald, "The Missouri River and Its Victims" in *The Missouri Historical Review*, Vol. 21, pp. 215-242, 455-480, 581-607.

³⁵⁰ *North Dakota: A Guide to the Northern Prairie State*, p. 96; *Missouri River*, House Document No. 238, 73rd Congress, 2nd Session, pp. 1-30; *Annual Report of the Inland Waterways Corporation*, 1939, p. 23; *The Des Moines Register*, June 27, 1940.

³⁵¹ Warren Upham, *Minnesota Geographic Names in the Minnesota Historical Collections*, Vol. 17, p. 2; D. E. Willard, *The Story of the North Star State*, p. 14; W. W. Folwell, *A History of Minnesota*, Vol. 1, map facing page 10.

³⁵² Jonathan Carver, *Travels Through the Interior Parts of North America*, pp. 100-102; George Catlin, *North American Indians*, Vol. 2, pp. 160-205; J. N. Nicollet, *Report of the Upper Mississippi River*, pp. 7-12, 27, 28.

³⁵³ William Delisle's map of 1718 shows the headwaters of the various streams in proper relation to each other. Subsequently cartographers have almost uniformly called attention to this unusual physiographical area.

Notes and References

⁸⁵⁴ National Resources Committee, *Drainage Basin Problems and Programs* (1936), pp. 272-277, 285-289, 290-293, 313-316, 349-351.

⁸⁵⁵ W. J. Petersen, "Across the Prairies of Iowa" in *The Palimpsest*, Vol. 12, pp. 331, 332; *Minnesota River, Minnesota*, House Document No. 230, 74th Congress, 1st Session, pp. 2-8; B. F. Shambaugh, *The Constitutions of Iowa*, pp. 156, 157, 162.

⁸⁵⁶ *Big and Little Sioux Rivers, Iowa and South Dakota*, House Document No. 189, 72nd Congress, 1st Session, pp. 1-25, and maps; Warren Upham, *Minnesota Geographic Names*, pp. 416, 466-469. In 1857 the original legislative act creating Rock and Pipestone counties inadvertently transposed them. This error was corrected in 1862. The town of Jasper in Pipestone County was named for its excellent quarries of "jasper" or red quartzite.

⁸⁵⁷ C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plate 24.

⁸⁵⁸ See maps opposite title page and p. xvi of Jonathan Carver's *Travels through the Interior Parts of North-America*. Robert Laurie and J. Whittle designated the Big Sioux as the "Rocky R." on their map of 1794. Victor Collot included the "G^t. R. of the Sioux" on his map of 1796. F. M. Perrin du Lac showed the Big Sioux on his map of 1802.

⁸⁵⁹ C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plates 28, 29, and 32-A.

⁸⁶⁰ R. G. Thwaites, *Original Journals of the Lewis and Clark Expedition 1804-1806*, Vol. 1, pp. 115-116.

⁸⁶¹ H. M. Brackenridge, "Journal of a Voyage up the River Missouri, performed in 1811" in R. G. Thwaites, *Early Western Travels*, Vol. 6, p. 85; J. C. Luttig, *Journal of a Fur-Trading Expedition on the Upper Missouri 1812-1813*, edited by Stella M. Drumm, p. 47.

⁸⁶² W. J. Petersen, "Up the Missouri with Atkinson" in *The Palimpsest*, Vol. 12, pp. 315-325.

⁸⁶³ Maximilian, Prince of Wied, "Travels in the Interior of North America" in R. G. Thwaites, *Early Western Travels*, Vol. 22, pp. 278, 321, 322, Vol. 24, p. 104; H. E. Scudder (editor), *The Complete Poetical Works of Henry Wadsworth Longfellow*, p. 115.

⁸⁶⁴ Maria R. Audubon, *Audubon and his Journals*, Vol. 1, pp. 488-490, Vol. 2, p. 170.

⁸⁶⁵ *History of the Counties of Woodbury and Plymouth, Iowa*, (1890-91), p. 60. A good account of those early boom days is found on pages 652-653. *Iowa: A Guide to the Hawkeye State*, pp. 299-312, contains a brief sketch of Sioux City.

⁸⁶⁶ *Dubuque Express & Herald* quoted in the *Sioux City Register*, April 14, 1859.

⁸⁶⁷ E. M. Eriksson, "Sioux City and the Black Hills Gold Rush 1874-1877" in

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The Iowa Journal of History and Politics, Vol. 20, pp. 319-347; *History of the Counties of Woodbury and Plymouth, Iowa*, (1890-91), p. 86; Census Bureau, Press release on "Housing Units in Iowa", December 26, 1940; *Fifteenth Census of the United States: 1930*, Population Bulletin: Iowa, p. 5.

³⁶⁸ *Sioux City Eagle*, June 18, 1859. The use of ferryboats for local excursions was common on western waters.

³⁶⁹ *Sioux City Eagle*, July 16, 1859.

³⁷⁰ *Sioux City Weekly Times*, June 22, July 27, 1872. The Episcopalians had a moonlight excursion on the steamboat *Western* but probably confined their voyage to the Missouri. —*Sioux City Weekly Times*, July 20, 1872.

³⁷¹ *Iowa Weather and Crop Service*, Vol. 47, pp. 117-128, Vol. 48, pp. 105-116; *Big and Little Sioux Rivers, Iowa and South Dakota*, House Document No. 189, 72nd Congress, 1st Session, pp. 1-5, 9-20.

³⁷² C. R. Keyes, "Prehistoric Man in Iowa" in *The Palimpsest*, Vol. 8, p. 222; Census Bureau, Press release on "Housing Units in Iowa", December 26, 1940.

³⁷³ R. G. Thwaites, *Original Journals of the Lewis and Clark Expedition 1804-1806*, Vol. 1, pp. 114, 115.

³⁷⁴ *Missouri River*, House Document No. 238, 73rd Congress, 2nd Session, pp. 330-334; Committee on Water Resources, Iowa State Planning Board, *Water Use and Conservation in Northwestern Iowa River Basins*, Vol. 6, pp. 3-5.

³⁷⁵ Quoted in the *Annals of Iowa* (Third Series), Vol. 4, p. 562.

³⁷⁶ H. M. Brackenridge, "Journal of a Voyage up the River Missouri, performed in 1811" in R. G. Thwaites, *Early Western Travels*, Vol. 6, p. 85; J. C. Luttig, *Journal of a Fur-Trading Expedition on the Upper Missouri 1812-1813*, edited by Stella M. Drumm, p. 47; George Catlin, *North American Indians*, Vol. 2, pp. 3, 4; Maximilian, Prince of Wied, "Travels in the Interior of North America" in R. G. Thwaites, *Early Western Travels*, Vol. 22, p. 278; Maria R. Audubon, *Audubon and His Journals*, Vol. 1, pp. 488, 489.

³⁷⁷ *Sioux City Eagle*, May 14, 1859.

³⁷⁸ *Sioux City Register*, April 5, June 7, 1862; *Iowa: A Guide to the Hawkeye State*, p. 422.

³⁷⁹ W. S. Freeman, *History of Plymouth County Iowa*, Vol. 1, pp. 99-103.

³⁸⁰ Ruth A. Gallaher, "The English Community in Iowa" in *The Palimpsest*, Vol. 2, pp. 80-94; Jacob Van der Zee, *The British in Iowa*, pp. 57-108, 113-119, and *The Hollanders of Iowa*, pp. 127-159. Brief accounts of some of the more important communities may be found in *Iowa: A Guide to the Hawkeye State*.

³⁸¹ *Missouri River*, House Document No. 238, 73rd Congress, 2nd Session, pp. 330-334; Committee on Water Resources, Iowa State Planning Board, *Water Use*

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and *Conservation in Northwestern Iowa*, Vol. 6, pp. 3-5, 9-15; F. A. Wilder, "Geology of Lyon and Sioux Counties" in the *Iowa Geological Survey*, Vol. 10, pp. 89-155 and maps. Reports No. 6, 40, 43, and 54 of the *Soil Survey of Iowa* prepared by the Agricultural Experiment Station at Ames, Iowa, give detailed information on the soil of the Floyd Valley.

³⁸² *Big and Little Sioux Rivers, Iowa and South Dakota*, House Document No. 189, 72nd Congress, 1st Session, pp. 1-11; Committee on Water Resources, Iowa State Planning Board, *Water Use and Conservation in Iowa*, Vol. 6, pp. 1-70. This volume is devoted to the streams in northwestern Iowa from the Big Sioux to the Soldier.

³⁸³ Water Resources Division, Iowa State Planning Board, *Stream Flow Records of Iowa: 1873-1932*, pp. 528, 533; C. R. Keyes, "Prehistoric Cultures" in *The Palimpsest*, Vol. 8, pp. 224-226.

³⁸⁴ C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plates 23-A, 24. Robert Laurie and J. Whittle designated the "Ajaouez" or Little Sioux River on their map of 1794. Victor Collot included the Little Sioux on his map of 1796, and Perrin du Lac showed it on his map of 1802.

³⁸⁵ R. G. Thwaites, *Original Journals of the Lewis and Clark Expedition 1804-1806*, Vol. 1, pp. 103, 104.

³⁸⁶ J. C. Luttig, *Journal of a Fur-Trading Expedition on the Upper Missouri 1812-1813*, edited by Stella M. Drumm, p. 45.

³⁸⁷ Maria R. Audubon, *Audubon and His Journals*, Vol. 1, p. 484, Vol. 2, p. 171. Audubon referred to the river as the *Sioux Pictout*.

³⁸⁸ W. J. Petersen, "Up the Missouri with Atkinson" in *The Palimpsest*, Vol. 12, pp. 320-321; Maximilian, Prince of Wied, "Travels in the Interior of North America" in R. G. Thwaites, *Early Western Travels*, Vol. 22, p. 332, Vol. 24, p. 105; Jacob Van der Zee, "Captain James Allen's Dragoon Expedition From Fort Des Moines, Territory of Iowa, in 1844" in *The Iowa Journal of History and Politics*, Vol. 11, pp. 105, 106.

³⁸⁹ C. A. White, *Report on the Geological Survey of the State of Iowa* (1870), Vol. 1, pp. 51, 52, 87, 88.

³⁹⁰ J. P. Bushnell, *Iowa Resources and Industries* (1885), p. 45. For a good popular account of this glacial period and a picture of Pilot Rock see A. F. Allen, *Northwestern Iowa*, Vol. 1, pp. 27-42.

³⁹¹ J. G. Wells, *Pocket Hand-Book of Iowa* (1857), pp. 43, 55-59, 68, 75, 94, 114, 115.

³⁹² A. F. Allen, *Northwestern Iowa*, Vol. 1, pp. 178, 179, 187-190.

³⁹³ Thomas Teakle, *The Spirit Lake Massacre*, pp. 44-127.

³⁹⁴ J. H. Smith, *History of Harrison County, Iowa*, pp. 130-133.

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³⁹⁵ Rufus Blanchard, *Hand-Book of Iowa* (1867), pp. 8, 64-66.

³⁹⁶ "An Eminent Foreigner's Visit to the Dutch Colonies of Iowa in 1873" in *The Iowa Journal of History and Politics*, Vol. 11, pp. 240, 241. The letter is edited by Jacob Van der Zee.

³⁹⁷ W. J. Petersen, "Trailmaking on the Frontier" in *The Palimpsest*, Vol. 12, pp. 298-303.

³⁹⁸ Incidents in the Little Sioux Valley are mentioned frequently in Jacob Van der Zee's "Episodes in the Early History of the Western Iowa Country" in *The Iowa Journal of History and Politics*, Vol. 11, pp. 323-363. See also A. F. Allen, *Northwestern Iowa*, Vol. 1, pp. 87-252.

³⁹⁹ *Iowa's State Parks and Preserves* (1937); *Iowa: A Guide to the Hawkeye State*. This book is a useful reference to many of the towns in the valley.

⁴⁰⁰ Committee on Water Resources, Iowa State Planning Board, *Water Use and Conservation in Iowa*, Vol. 6, pp. 1-7; Water Resources Division, Iowa State Planning Board, *Stream Flow Records of Iowa: 1873-1932*, p. 549.

⁴⁰¹ J. H. Smith, *History of Harrison County, Iowa*, p. 23; C. W. Hunt and W. L. Clark, *History of Harrison County, Iowa*, p. 36.

⁴⁰² F. M. Perrin du Lac, *Travels Through the Two Louisianas, and among the Savage Nations of the Missouri in 1801, 1802, & 1803*. This rare volume was printed in London in 1807 by J. G. Barnard for Richard Phillips. The map is not contained in the English edition but may be consulted in the earlier and more complete French edition entitled *Voyage dans les deux Louisianes et chez les nations sauvages du Missouri*. This volume was published in Paris by Capette & Renaud in 1805.

⁴⁰³ R. G. Thwaites, *Original Journals of the Lewis and Clark Expedition, 1804-1806*, Vol. 1, p. 101, Vol. 5, p. 379, Vol. 6, pp. 43, 58, 229, Vol. 7, p. 24; M. M. Quaife, *The Journals of Captain Meriwether Lewis and Sergeant John Ordway*, p. 106.

⁴⁰⁴ H. M. Brackenridge, "Journal of a Voyage up the River Missouri, performed in 1811" in R. G. Thwaites, *Early Western Travels*, Vol. 6, p. 79. In a footnote about the Soldier River, Thwaites described it as an "affluent of the Missouri, the origin of whose name is apparently not now known."

⁴⁰⁵ J. C. Luttig, *Journal of a Fur-Trading Expedition on the Upper Missouri 1812-1813*, edited by Stella M. Drumm, p. 45; W. J. Petersen, "Up the Missouri with Atkinson" in *The Palimpsest*, Vol. 12, p. 320.

⁴⁰⁶ Maximilian, Prince of Wied, "Travels in the Interior of North America" in R. G. Thwaites, *Early Western Travels*, Vol. 22, p. 276, Vol. 24, p. 105.

⁴⁰⁷ W. J. Petersen, "Trailmaking on the Frontier" in *The Palimpsest*, Vol. 12, pp. 300, 301; "Report and Journal of Captain James Allen's Dragoon Expedition . . . of 1844" in *The Iowa Journal of History and Politics*, Vol. 11, p. 79.

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⁴⁰⁸ C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plates 29, 32-A; A. M. Lea, *Notes on Wisconsin Territory, with a Map*.

⁴⁰⁹ J. G. Wells, *Pocket Hand-Book of Iowa* (1857), pp. 43, 63, 64. His map shows the Soldier rising in Sac County. See also W. D. Wilson, *A Description of Iowa and Its Resources* (1865), p. 80.

⁴¹⁰ J. H. Smith, *History of Harrison County, Iowa* (1888), pp. 28-29. The west side of the Soldier River, according to Smith, is "bounded by ranges of bluffs unrivalled in variety of picturesque scenery by any similar region in the Missouri Valley".

⁴¹¹ C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plates 24, 29, 32-A; E. D. Fite and Archibald Freeman, *A Book of Old Maps* (1926), pp. 180, 232, 274; Laurie & Whittle, "A New Map of North America"; F. M. Perrin du Lac, *Travels Through the Two Louisianas*. For the various spellings of the word Boyer consult the index to R. G. Thwaites, *Early Western Travels*.

⁴¹² Committee on Water Resources, Iowa State Planning Board, *Water Use and Conservation in Iowa*, Vol. 5, pp. 1-5; Water Resources Division, Iowa State Planning Board, *Stream Flow Records of Iowa: 1873-1932*, pp. 33, 495, 560.

⁴¹³ R. G. Thwaites, *Original Journals of the Lewis and Clark Expedition, 1804-1806*, Vol. 1, p. 93, Vol. 6, pp. 42, 58, Vol. 7, p. 22; M. M. Quaife, *The Journals of Captain Meriwether Lewis and Sergeant John Ordway*, p. 102.

⁴¹⁴ H. M. Brackenridge, "Journal of a Voyage up the River Missouri, performed in 1811" in R. G. Thwaites, *Early Western Travels*, Vol. 6, pp. 73, 78; W. B. Douglas, "Manuel Lisa" in the *Missouri Historical Society Collections*, Vol. 3, pp. 233-268, 367-406, and note 46. H. M. Chittenden and Stella M. Drumm believe this post was in Nebraska while Elliott Coues contends it was in Iowa.

⁴¹⁵ J. C. Luttig, *Journal of a Fur-Trading Expedition on the Upper Missouri 1812-1813*, edited by Stella M. Drumm, p. 44.

⁴¹⁶ Edwin James, "Account of an Expedition From Pittsburgh to the Rocky Mountains, Performed in the Years 1819, 1820" in R. G. Thwaites, *Early Western Travels*, Vol. 14, pp. 221, 265, 266, 283, 284, Vol. 15, pp. 136-139, 237, 278, 279.

⁴¹⁷ "An Expedition Across Iowa in 1820" in the *Annals of Iowa* (Third Series), Vol. 10, pp. 343-346; W. J. Petersen, "Trailmaking on the Frontier" in *The Palimpsest*, Vol. 12, pp. 298-314. On March 6, 1887, the *Logan Observer* referred to what was said to have been the "last buffalo" killed in Harrison County, an incident that occurred in 1863. The editor went on to argue that it was also the "first buffalo ever killed or seen by any white man" in the county, because he believed buffalo never approached nearer than seventy-five miles to the Missouri from the west. — See J. H. Smith, *History of Harrison County, Iowa*, pp. 123, 124.

⁴¹⁸ Maximilian, Prince of Wied, "Travels in the Interior of North America"

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in R. G. Thwaites, *Early Western Travels*, Vol. 22, p. 268; Maria R. Audubon, *Audubon and His Journals*, Vol. 1, pp. 480-482.

⁴¹⁹ A. R. Fulton, *The Red Men of Iowa*, p. 288.

⁴²⁰ J. H. Smith, *History of Harrison County, Iowa*, pp. 26, 27, 79-102; C. W. Hunt and W. L. Clark, *History of Harrison County, Iowa*, pp. 292-339. A. M. Fyrando made the following comment over the loss of the county seat in the *Logan Observer*, September, 1905: "Yes, we felt sore over the county seat being removed, but we turned our attention to less contention, more of peace, less courts, more homes, less transients, more and better tax-payers". For a good description of Magnolia see *The Palimpsest*, Vol. 2, pp. 290-297.

⁴²¹ J. G. Wells, *Pocket Hand-Book of Iowa* (1857), pp. 64, 75; Rufus Blanchard, *Hand-Book of Iowa* (1867), p. 67; W. D. Wilson, *A Description of Iowa and Its Resources* (1865), p. 79.

⁴²² C. W. Hunt and W. L. Clark, *History of Harrison County, Iowa*, pp. 292-355. A good account of Denison may be found in F. W. Meyers, *History of Crawford County, Iowa*, Vol. 1, pp. 131-150. For the letters of J. W. Denison consult *The Iowa Journal of History and Politics*, Vol. 31, pp. 87-126, 274-304. On October 15, 1855, Denison wrote the Providence Western Land Company that he was off on his "surveying excursion" to find the "lucky spot" in fast-growing Iowa. On November 21st he wrote that he had selected the place where Denison is located within two and one-half miles of the "geographical center" of Harrison County and a spot which had "one of the best mill seats on the Boyer River". Denison admitted that the region was not well timbered but believed there was enough wood for all practical purposes.

⁴²³ For a good sketch of Clarence Chamberlin see *The Palimpsest*, Vol. 11, pp. 376-397.

⁴²⁴ Blanche C. Sly, "Magnolia" in *The Palimpsest*, Vol. 2, pp. 290-297.

⁴²⁵ *The State of Iowa: A Short Description for the Advice of Immigrants*. This brochure was printed in 1861 by John A. Daldorf & Co. of Davenport under authority of the State. It was probably the first tract issued by Iowa following the establishment of a Commissioner of Immigration in 1860. Lieutenant Governor Nicholas J. Rusch was appointed Commissioner and possibly wrote or directed the compilation of the book. For an account of his work see M. L. Hansen, "Official Encouragement of Immigration to Iowa" in *The Iowa Journal of History and Politics*, Vol. 19, pp. 159-195.

⁴²⁶ Committee on Water Resources, Iowa State Planning Board, *Water Use and Conservation in Iowa*, Vol. 5, pp. 1, 2.

⁴²⁷ Water Resources Division, Iowa State Planning Board, *Stream Flow Records of Iowa: 1873-1932*, pp. 47, 61, 546, 556; *Missouri River*, House Document No.

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238, 73rd Congress, 2nd Session, pp. 334-339; Committee on Water Resources, Iowa State Planning Board, *Water Use and Conservation in Iowa*, Vol. 5, pp. 1-5.

⁴²⁸ C. H. Babbitt, *Early Days in Council Bluffs*, pp. 7-96; O. L. Baskin, *History of Pottawattamie County, Iowa*, pp. 11-97. See index card 230 of the Newton D. Mereness file of Iowa post offices in the library of the State Historical Society of Iowa.

⁴²⁹ Brief accounts of the towns in the Nishnabotna Valley may be found in *Iowa: A Guide to the Hawkeye State*. More complete information may be gleaned from various county histories.

⁴³⁰ *Missouri River*, House Document No. 238, 73rd Congress, 2nd Session, pp. 334-337; Committee on Water Resources, Iowa State Planning Board, *Water Use and Conservation in Iowa*, Vol. 5, pp. 1-10.

⁴³¹ A. R. Fulton, *The Red Men of Iowa*, p. 428. The various spellings of Nishnabotna and Fulton's explanation of the word's meaning are subjects of considerable comment in the *History of Montgomery County, Iowa* (1881), pp. 395-397.

⁴³² The writer of the Montgomery County History found seven ways of spelling Nishnabotna. These did not include the complicated orthography of the Lewis and Clark Journals. See also J. C. Luttig, *Journal of a Fur-Trading Expedition on the Upper Missouri 1812-1813*, edited by Stella M. Drumm, p. 41.

⁴³³ Robert Laurie and J. Whittle, "A New Map of North America".

⁴³⁴ Victor Collot, *A Journey in North America*, Vol. 1, pp. 279, 280, Vol. 3 (Atlas), Plate 1. A translation of the French edition of 1826 was made by J. Christian Bay and reprinted in three volumes in 1924 by O. Lange, Florence, Italy.

⁴³⁵ F. M. Perrin du Lac, *Travels Through the Two Louisianas* (1804), pp. 47-54. His description of the lower Missouri Valley is significant because the French edition of his book appeared before Lewis and Clark returned from the Pacific Coast.

⁴³⁶ R. G. Thwaites, *Original Journals of the Lewis and Clark Expedition, 1804-1806*, Vol. 1, p. 79, Vol. 6, pp. 37-42, 57, 58, Vol. 7, pp. 18, 42; M. M. Quaife, *The Journals of Captain Meriwether Lewis and Sergeant John Ordway*, pp. 97, 98. On July 14, 1804, as they were approaching the Nishnabotna, the "atmisp^r. became Suddenly darkened by a black and dismal looking Cloud" which was followed by a "Dredfulle hard Storme" lasting about "one ouer". The furious wind "Inrag^d. the watter to Such a degree that all hands had to Get in the Watter to keep up the boat." During the storm Captain Clark's "notes & Remarks of 2 days blew over-board" and he was "much put to it to Recolect the courses, &C."

⁴³⁷ Edwin James, "Account of an Expedition from Pittsburgh to the Rocky Mountains" in R. G. Thwaites, *Early Western Travels*, Vol. 14, pp. 216-218.

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⁴³⁸ Maria R. Audubon, *Audubon and His Journals*, Vol. 1, pp. 475-477.

⁴³⁹ C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plates 76-G, 77-A, 77-B.

⁴⁴⁰ Jacob Van der Zee, "The Mormon Trails in Iowa" in *The Iowa Journal of History and Politics*, Vol. 12, pp. 3-16; I. B. Richman, *John Brown Among the Quakers*, pp. 15-21.

⁴⁴¹ B. F. Gue, *History of Iowa*, Vol. 4, p. 181; *Iowa: A Guide to the Hawkeye State*, p. 414.

⁴⁴² *Iowa: A Guide to the Hawkeye State*, pp. 414, 430, 495, 496; *Iowa's State Parks and Preserves* (1937), p. 69; J. A. Swisher, "Some Historic Sites in Iowa" in *The Iowa Journal of History and Politics*, Vol. 32, pp. 258, 259.

⁴⁴³ *Iowa: A Guide to the Hawkeye State*, pp. 415, 420, 421, 430, 495, 496, 533; W. J. Petersen, "Iowa in 1934" in *The Palimpsest*, Vol. 16, pp. 260-262.

⁴⁴⁴ The statistical data concerning these five streams has been gleaned from the following sources: Committee on Water Resources, Iowa State Planning Board, *Water Use and Conservation in Iowa*, Vol. 3, pp. 1-5; Water Resources Division, Iowa State Planning Board, *Stream Flow Records of Iowa: 1873-1932*, pp. 40, 47, 54, 61, 68, 75; *Grand River: Missouri and Iowa*, House Document No. 236, 72nd Congress, 1st Session, pp. 1-96, and maps; *Missouri River*, House Document No. 238, 73rd Congress, 2nd Session, pp. 348-353. The "Drainage Map of Missouri" prepared by the Missouri Bureau of Geology and Mines in 1927 was very useful.

⁴⁴⁵ Committee on Water Resources, Iowa State Planning Board, *Water Use and Conservation in Iowa*, Vol. 3, p. 3, figures 1, 4, 6; Water Resources Division, Iowa State Planning Board, *Stream Flow Records of Iowa: 1873-1932*, p. 553; *Drainage Map of Missouri*; D. W. Eaton "How Missouri Counties, Towns and Streams were Named" in *The Missouri Historical Review*, Vol. 10, p. 203.

⁴⁴⁶ R. G. Thwaites, *Original Journals of the Lewis and Clark Expedition, 1804-1806*, Vol. 1, pp. 74, 77, Vol. 6, pp. 37, 57, Vol. 7, p. 17; M. M. Quaife, *The Journals of Captain Meriwether Lewis and Sergeant John Ordway*, p. 95; H. M. Brackenridge, "Journal of a Voyage up the River Missouri, performed in 1811" in R. G. Thwaites, *Early Western Travels*, Vol. 6, pp. 70-72; C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plates 29 and 32-A.

⁴⁴⁷ Committee on Water Resources, Iowa State Planning Board, *Water Use and Conservation in Iowa*, Vol. 3, pp. 1-21.

⁴⁴⁸ R. G. Thwaites, *Original Journals of the Lewis and Clark Expedition, 1804-1806*, Vol. 1, p. 70, Vol. 6, p. 37, Vol. 7, p. 41; M. M. Quaife, *The Journals of Captain Meriwether Lewis and Sergeant John Ordway*, pp. 93, 96; A. R. Fulton, *The Red Men of Iowa*, p. 428.

⁴⁴⁹ F. A. Sampson, "Washington Irving" in *The Missouri Historical Review*, Vol.

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5, pp. 18, 25; H. M. Brackenridge, "Journal of a Voyage up the River Missouri, performed in 1811", Edwin James, "Account of an Expedition from Pittsburgh to the Rocky Mountains", and Maximilian, Prince of Wied, "Travels in the Interior of North America" in R. G. Thwaites, *Early Western Travels*, Vol. 6, pp. 69, 70, 165, Vol. 14, p. 181, Vol. 22, pp. 253, 258; J. C. Luttig, *Journal of a Fur-Trading Expedition on the Upper Missouri, 1812-1813*, edited by Stella M. Drumm, p. 38.

⁴⁵⁰ Committee on Water Resources, Iowa State Planning Board, *Water Use and Conservation in Iowa*, Vol. 3, pp. 1-11; *Missouri River*, House Document No. 238, 73rd Congress, 2nd Session, pp. 348-353, 378, 379; *Drainage Map of Missouri* (1927).

⁴⁵¹ Victor Collot, *A Journey in North America*, Vol. 1, 279; Perrin du Lac, "Carte du Missouri".

⁴⁵² R. G. Thwaites, *Original Journals of the Lewis and Clark Expedition, 1804-1806*, Vol. 1, pp. 62, 63, Vol. 6, p. 36, Vol. 7, p. 14; M. M. Quaife, *Journals of Captain Meriwether Lewis and Sergeant John Ordway*, p. 90; C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plates 29 and 32-A.

⁴⁵³ H. M. Brackenridge, "Journal of a Voyage up the River Missouri, performed in 1811", Edwin James, "Account of an Expedition from Pittsburgh to the Rocky Mountains", and Maximilian, Prince of Wied, "Travels in the Interior of North America" in R. G. Thwaites, *Early Western Travels*, Vol. 6, pp. 67, 165, Vol. 15, p. 135, Vol. 22, pp. 252, 253; Maria R. Audubon, *Audubon and His Journals*, Vol. 1, p. 469; J. C. Luttig, *Journal of a Fur-Trading Expedition on the Upper Missouri, 1812-1813*, edited by Stella M. Drumm, p. 36.

⁴⁵⁴ *Grand River, Missouri and Iowa*, House Document No. 236, 72nd Congress, 1st Session, pp. 1-102; Committee on Water Resources, Iowa State Planning Board, *Water Use and Conservation in Iowa*, Vol. 3, pp. 1-30; *Drainage Map of Missouri* (1927).

⁴⁵⁵ Robert Laurie and J. Whittle, "A New Map of North America"; Victor Collot, *A Journey in North America*, Vol. 1, pp. 278, 279; F. M. Perrin du Lac, *Travels Through the Two Louisianas*, p. 50; C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plate 28.

⁴⁵⁶ H. M. Brackenridge, *Views of Louisiana* (1817), p. 109.

⁴⁵⁷ R. G. Thwaites, *Original Journals of the Lewis and Clark Expedition, 1804-1806*, Vol. 1, pp. 47, 48; Vol. 6, p. 34.

⁴⁵⁸ H. M. Brackenridge, "Journal of a Voyage up the River Missouri, performed in 1811", and Edwin James, "Account of an Expedition from Pittsburgh to the Rocky Mountains" in R. G. Thwaites, *Early Western Travels*, Vol. 6, p. 50, Vol. 15, pp. 182-186.

⁴⁵⁹ *Missouri River*, House Document No. 238, 73rd Congress, 2nd Session, pp.

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358-361; Committee on Water Resources, Iowa State Planning Board, *Water Use and Conservation in Iowa*, Vol. 3, pp. 1-15.

⁴⁶⁰ A. R. Fulton, *The Red Men of Iowa*, pp. 422, 423; D. W. Eaton, "How Missouri Counties, Towns and Streams were Named" in *The Missouri Historical Review*, Vol. 10, pp. 274-275; Victor Collot, *A Journey in North America*, Vol. 1, p. 278. R. G. Thwaites declared the origin of the word was unknown. — *Early Western Travels*, Vol. 14, p. 158.

⁴⁶¹ R. G. Thwaites, *The Original Journals of the Lewis and Clark Expedition*, 1806, Vol. 1, pp. 47, 48, Vol. 6, p. 34.

⁴⁶² H. M. Brackenridge, "Journal of a Voyage up the River Missouri, performed in 1811" and Edwin James, "Account of an Expedition from Pittsburgh to the Rocky Mountains" in R. G. Thwaites, *Early Western Travels*, Vol. 6, pp. 47-49, Vol. 14, pp. 178-180.

⁴⁶³ *Iowa: A Guide to the Hawkeye State*, pp. 528, 540, 541; *Iowa's State Parks and Preserves* (1937), pp. 21, 45.

⁴⁶⁴ Committee on Water Resources, Iowa State Planning Board, *Water Use and Conservation in Iowa*, Vol. 3, pp. 6-54.

⁴⁶⁵ E. M. Eriksson, "The Honey War" in *The Palimpsest*, Vol. 5, pp. 339-350; B. H. Wilson, "The Southern Boundary" in *The Palimpsest*, Vol. 19, pp. 413-424.

⁴⁶⁶ Jacob Van der Zee, "The Mormon Trails in Iowa" in *The Iowa Journal of History and Politics*, Vol. 12, pp. 3-16; "Journeying in the Wilderness" in *The Historical Record*, Vol. 8, pp. 877-880. The latter is a periodical edited and published by Andrew Jenson in Salt Lake City, Utah.

⁴⁶⁷ C. O. Paullin, *Atlas of the Historical Geography of the United States*, Plates 76-G, 77-A, 77-B; *Eighteenth Annual Report of the Bureau of American Ethnology*, Part 2, Plate 131; B. E. Mahan, "Making the Treaty of 1842" in *The Palimpsest*, Vol. 10, pp. 174-180; Alonzo Abernethy, "Early Iowa Indian Treaties and Boundaries" in the *Annals of Iowa* (Third Series), Vol. 11, pp. 241-259, 358-380.

⁴⁶⁸ Henry Van Dyke, *Little Rivers*, p. 21.

⁴⁶⁹ W. G. Hoyt and H. J. Ryan, "Gazetteer of Surface Waters of Iowa" in the *United States Geological Survey, Water-Supply Paper 345*, pp. 169-221; Water Resources Division, Iowa State Planning Board, *Stream Flow Records of Iowa: 1873-1932*, pp. 487-562. The remainder of this chapter, unless otherwise noted, is based on the compilation in this book.

⁴⁷⁰ Eliphalet Price, "The Origin and Interpretation of the Names of the Rivers and Streams of Clayton County" in the *Annals of Iowa* (First Series), Vol. 4, pp. 753-759.

⁴⁷¹ A. F. Allen, *Northwestern Iowa*, Vol. 1, pp. 146, 147, 191, 192; C. W. Hunt and W. L. Clark, *History of Harrison County, Iowa*, p. 36.

Notes and References

⁴⁷² Jacob Ferris, *The States and Territories of the Great West*, pp. 264, 265.

⁴⁷³ *Sioux City Eagle*, February 19, 1859.

⁴⁷⁴ Eliphalet Price, "The Origin and Interpretation of the Names of the Rivers and Streams of Clayton County" in the *Annals of Iowa* (First Series), Vol. 4, pp. 707-711. Bloody Run in Clayton County was named in honor of Lieutenant Martin Scott who was stationed at Fort Crawford at Prairie du Chien. A great huntsman, Scott often crossed the Mississippi into Iowa with the following jocular remark: "I am going to make the *blood run* to-day over on my hunting ground." It was from this remark that Bloody Run received its name from Lieutenant Scott's fellow soldiers at Fort Crawford.

⁴⁷⁵ J. H. Smith, *History of Harrison County, Iowa*, pp. 20, 21; *The History of Cedar County* (1901), Vol. 1, pp. 328, 329; D. G. McCarty, *History of Palo Alto County, Iowa*, pp. 154, 155; *History of Mills County, Iowa* (1881), p. 324; C. W. Hunt and W. L. Clark, *History of Harrison County, Iowa*, p. 36.

⁴⁷⁶ G. C. Duffield, "An Iowa Settler's Homestead" in the *Annals of Iowa* (Third Series), Vol. 6, p. 206.

⁴⁷⁷ W J McGee, *The Pleistocene History of Northeastern Iowa*, p. 209.

⁴⁷⁸ *Weekly Times* (Dubuque), May 24, 1860, May 30, 1861.

⁴⁷⁹ Edith Rule and W. J. Petersen, *True Tales of Iowa*, pp. 25-28; W. J. Petersen, "Julien Dubuque" in *The Palimpsest*, Vol. 12, pp. 421-433; O. F. Grahame, "The First Iowa School" in *The Palimpsest*, Vol. 5, pp. 401-407; G. P. Mitchell, *A Century of Iowa Baptist History, 1834-1934*, pp. 17, 18; G. C. Duffield, "Frontier Church Going—1837" in the *Annals of Iowa* (Third Series), Vol. 6, pp. 266-275.

⁴⁸⁰ R. L. Stevenson, "Prince Otto" in *The Novels and Tales of Robert Louis Stevenson*, Vol. 4, p. 17.

⁴⁸¹ Henry Van Dyke, *Little Rivers*, p. 9.

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